

157-732

Policy, Research, and External Affairs

**WORKING PAPERS**

Macroeconomic Adjustment  
and Growth

Country Economics Department  
The World Bank  
July 1991  
WPS 732

# Stabilization Programs in Eastern Europe

## A Comparative Analysis of the Polish and Yugoslav Programs of 1990

Fabrizio Coricelli  
and  
Roberto de Rezende Rocha

Two apparently similar programs launched at roughly the same time by Yugoslavia and Poland yielded significantly different initial results (output fell much more while inflation declined more slowly in Poland than in Yugoslavia).

The Policy, Research, and External Affairs Complex distributes PRE Working Papers to disseminate the findings of work in progress and to encourage the exchange of ideas among Bank staff and all others interested in development issues. These papers carry the names of the authors, reflect only their views, and should be used and cited accordingly. The findings, interpretations, and conclusions are the authors' own. They should not be attributed to the World Bank, its Board of Directors, its management, or any of its member countries.

This paper — a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department — is part of a larger effort in PRE to analyze the design and the effects of stabilization programs in Central and Eastern Europe. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Rebecca Martin, room N11-077, extension 39065 (67 pages).

Coricelli and Rocha compare the implementation of two apparently similar stabilization programs by two reforming socialist countries, launched two weeks apart (December 1989 in Yugoslavia and January 1990 in Poland).

They investigate possible differences underlying the apparently similar programs that may account for the better initial performance of Yugoslavia's program (a sharper reduction of inflation with smaller losses in output).

The authors identify significant differences in initial conditions in the two countries as well as the sequence and degree of some policy measures. These differences may explain the difference in the early results.

They also identify the most important issues the two countries must address in the second

stage of reform. These include the unfreezing of nominal variables and resolving the critical structural problems affecting both economies.

Coricelli and Rocha conclude that the microfoundations of socialist and market economies are clearly different. These differences imply that in socialist economies the case for including incomes policy in stabilization programs may be stronger. Different microfoundations also imply that the model of sequencing traditionally applied to Latin American countries — where structural issues are relegated to later stages of the adjustment programs — does not seem to apply to reforming socialist countries, where stabilization and structural reforms are much more closely intertwined.

## Table of Contents

Introduction . . . . .	4
Background . . . . .	6
Conditions Preceding Stabilization . . . . .	8
A Comparison of the Two Stabilization Programs . . . . .	14
Examination of the Initial Results . . . . .	18
Assessment of the Main Issues . . . . .	30
APPENDIX A . . . . .	34
STABILIZATION IN POLAND . . . . .	34
Background . . . . .	34
Preparation for the Stabilization Program and Other Developments in 1989 . . . . .	37
The Stabilization Program of January 1990 . . . . .	40
Initial Results . . . . .	41
APPENDIX B . . . . .	49
STABILIZATION IN YUGOSLAVIA . . . . .	49
Background . . . . .	49
Developments in 1989 and Preparations for the 1990 Program . . . . .	54
The Stabilization Program of 1990 . . . . .	55
First Results of the 1990 Program . . . . .	57
An Assessment of the Main Issues . . . . .	63
References . . . . .	65

---

The authors are grateful to Guillermo Calvo, Vittorio Corbo, Alex Cuckierman, Miguel Kiguel, Nissan Liviatan, Branko Milonovic and Jeffrey Sachs for their helpful comments on an earlier version of the paper. The authors are also grateful to Rodney Chun for his very competent research assistance.

## Introduction

Dissatisfaction with their performance and concern over the acceleration of inflation led the governments of Poland and Yugoslavia to implement stabilization cum restructuring programs at the end of 1989. Their programs, which they launched at approximately the same time (December 18 in Yugoslavia and January 1 in Poland), comprise measures designed not only to stabilize inflation at low levels but also to change the structure of their economic systems.

The stabilization components of both programs would ordinarily be classified as heterodox, since they include incomes policy measures in addition to a significant fiscal adjustment, the imposition of credit controls and the relaxation of exchange rate and trade controls. The restructuring components of the two programs also share some similarities. Both attempt to force inefficient enterprises into bankruptcy, albeit through different methods. However, in neither case is there a clearly defined strategy to deal with bankrupt enterprises, including of the precise role of privatization in the overall reform strategy. In fact, both countries are still elaborating several aspects of their restructuring components.

Both programs brought about a substantial reduction in inflation in the first semester of 1990 without recourse to widespread price controls. In the case of Poland, inflation was reduced from a peak of 78 percent in January to 3.5 percent in June. In the case of Yugoslavia, inflation went from a peak of 60 percent in December 1989 to almost 0 percent in May and June 1990. The performance of the two programs in the second semester of 1990 was less satisfactory, with monthly inflation rates of around 5 percent in Poland and ranging between 3 and 8 percent in Yugoslavia.

Both countries experienced a sharp contraction in economic activity following the implementation of their programs. During 1990, real GDP fell by 12.5 and 7.5 percent in Poland and Yugoslavia, respectively. The contraction

of activity was particularly strong in the industrial sector, as indicated by negative growth rates of 20 and 10 percent, respectively. Although the output contraction was concentrated in the first semester of 1990, the prospects for a sustained resumption of growth are still uncertain in both countries.

The implementation of two apparently similar programs by two reforming socialist countries at almost the same time has produced great interest in a comparative analysis of their design, performance and sustainability. Such is the objective of this paper. To this end, the paper investigates the possible differences that underlie the similarities of the two programs, and that may account for the better initial performance of Yugoslavia's program (a sharper reduction of inflation with smaller output losses). The paper identifies significant differences in initial conditions in the two countries, as well as in the sequence and degree of some policy measures. These differences may explain the differences in the early results. Finally, the paper identifies the most important issues that the two countries will have to address in the second stage of their programs. These include the unfreezing of nominal variables and resolution of the critical structural problems affecting both economies.

The next section provides some background information on inflation in the two countries during the 1980s. The following section examines the conditions in the two economies before stabilization. A comparison of the components of the two programs is presented in the subsequent section, followed by a section that analyzes the initial results of the programs and points to the possible causes of the more severe recession in Poland. It also identifies the likely causes of the revival of inflation in Yugoslavia during the second semester of 1990. The final section assesses the main issues facing the second stage of the reform in the two countries. Much more detailed analyses of the two programs appear in the two appendices (appendix A deals with Poland, appendix B with Yugoslavia).

## Background

The histories of inflation in Poland and Yugoslavia during the last decade are quite different. As shown in figure 1, inflation in Poland was more erratic than that in Yugoslavia. The dominant feature in the first half of the decade in Poland was a jump in 1981-82, while in the second half inflation showed an upward trend until 1988, followed by another jump in 1989 when it reached 700 percent. In Yugoslavia inflation was more or less stable until 1983. After that year it accelerated almost continuously, reaching 2,700 percent in 1989. In general, the rates of inflation in Yugoslavia were much higher than in Poland (except in 1982) and the OECD average for the decade.

These differences in the path of inflation reflect in part differences in the structure of the two economies. Until the early 1980s Poland had a centrally planned economy, when it initiated a gradual decentralization. Yugoslavia had already replaced its central planning with a system of self-management in the early 1960s. As a result, there was much less interference in the price system in Yugoslavia. Unlike in Poland, price controls in Yugoslavia were rarely strong enough to repress inflation. In fact, they bore a greater resemblance to the controls prevailing in other high inflation countries such as Brazil (which has always had controls of some sort).

The phenomenon of high inflation in Yugoslavia was closely associated with the turnaround in the current account during the 1980s--typically inflation accelerates as the current account shifts from a deficit to an increasing surplus. Two major factors underlay the close association between inflation and the current account in Yugoslavia. First, the need to reduce the real wage to levels consistent with a given depreciated real exchange rate required an increase in the rate of inflation--the Pazos-Simonsen mechanism (see Dornbusch 1987; Pazos 1978; and Simonsen 1989). This factor became more important at the end of the decade, with the increase in real wage rigidity occurring after the formal introduction of wage indexation in 1987.

Second, the conditions that prevailed after the reversal of the flows in external financing considerably worsened the financial situation of Yugoslav enterprises, where the fundamental imbalances of the Yugoslav economy were located (the non-financial public sector ran surpluses throughout the 1980s). Large losses in foreign exchange as a result of interest and principal payments, combined with stagnant output and increasing overstaffing, resulted in greater enterprise losses in the 1980s. The enterprise imbalances spilled over to the central bank, since the latter had to absorb large amounts of foreign liabilities in an effort to protect the enterprises and commercial banks from even greater financial difficulty. As a result, the central bank ran a quasi-fiscal deficit that became an independent source of monetary expansion. The various attempts at stabilization failed to address the hidden losses in the system and were abandoned soon after implementation.

Unlike in Yugoslavia, the non-financial public sector in Poland ran deficits during the 1980s, while enterprise accounts showed small surpluses. The fiscal deficits were, however, kept at moderate levels (1-2 percent of gross national product [GNP]) during most of this period, the exceptions being 1981 and 1989, when the deficit was much larger (10 percent and 8 percent of GNP, respectively). In addition, the negative transfer of resources from abroad, as measured by the non-interest current account surplus, was much smaller in Poland (2-3 percent of GNP) than it was in Yugoslavia (5-7 percent of GNP).<sup>1</sup>

These numbers indicate that the underlying rate of inflation consistent with "fundamentals" was lower in the case of Poland. At the same time, the much stricter price controls in Poland make it more difficult to associate the movement of inflation with the fundamentals.<sup>2</sup> In addition, there is some

---

<sup>1</sup> In fact, Poland managed to run current account deficits throughout the 1980s, while Yugoslavia ran increasing current account surpluses after 1983.

<sup>2</sup> Even in countries with open inflation, it may be difficult to establish a continuously close relationship between budgetary developments, money creation and inflation. See Sargent and Wallace (1981), Bruno and Fischer (1987) and Drazen and Helpman (1988) for theoretical demonstrations of

association between price controls and budgetary performance via the subsidies. For instance, the outburst of inflation in 1982 coincided with a sharp reduction in the deficit from 1981 to 1982, a phenomenon that occurred again from the first to the second half of 1989.

#### Conditions Preceding Stabilization

Conditions in the Polish and Yugoslav economies preceding the two stabilization programs are summarized in table 1. In Poland, the sharp increase in inflation during 1989 was the result of not only the increased fiscal deficit (7.9 percent of GNP, the bulk of which was incurred in the first semester) but also the successive price shocks related to the liberalization of food prices (August), the first round of adjustment of energy prices (October) and repeated devaluations accompanied by the introduction of formal wage indexation.

In Yugoslavia, various factors contributed to the open inflation of 2,700 percent in 1989. First, a large real devaluation in mid-1988 in the context of formal wage indexation caused wages and prices to escalate. Second, although the government abandoned its target for the real exchange rate in mid-1989, an explosion in real wages in the second semester sustained the inflationary pressure. Finally, the hidden losses in the system, which had not been corrected, constituted a permanent source of monetary expansion and inflation. Pressure on the money supply was further increased by the large build-up in foreign exchange reserves over the year. In 1989, seignorage revenues on base money reached 13 percent and 12 percent of GNP in Poland and Yugoslavia, respectively.

---

the possibility of weak links in the short run and Kiguel and Liviatan (1990) for a recent examination of the Argentine and Brazilian cases.

Figure 1

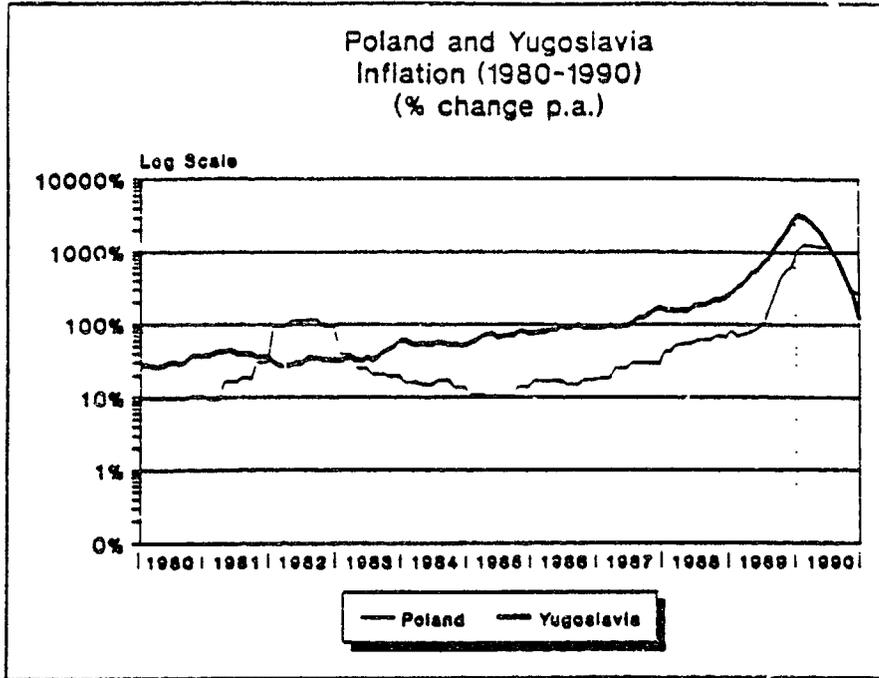
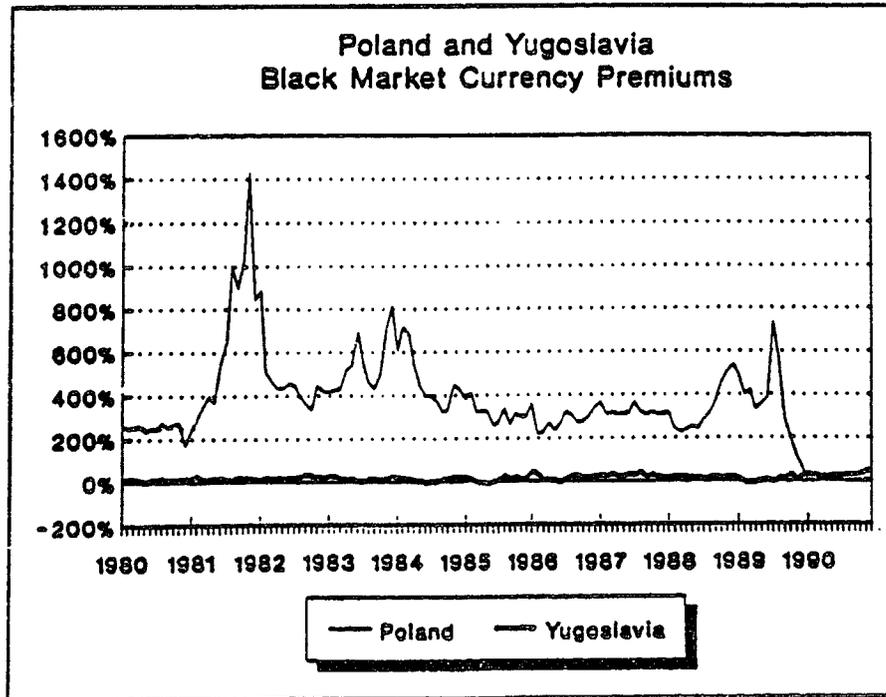


Figure 2



The fiscal deterioration in Poland during 1989 was partly attributable to the fall in real tax revenues, which in turn resulted in part from lags in the collection of taxes--the Olivera-Tanzi effect (see Olivera 1967 and Tanzi 1977). As shown in table 2, the revenue loss amounted to 7 percent of GNP.

In Yugoslavia, on the other hand, the erosion of fiscal revenues in the 1980s tended to be offset by adjustments in the tax rates and contributions, as well as by the partial indexation of some taxes. In the years when these measures proved insufficient to stabilize real tax revenues, the government adjusted expenditures so as to prevent a deficit. These factors make estimation of the Olivera-Tanzi effect more difficult in the case of Yugoslavia.

Yugoslavia enjoyed a more comfortable external position before 1990 than did Poland. The large current account surplus of 1989--US\$2.4 billion--and the successful debt rescheduling of 1988 allowed foreign reserves to rise to US\$6.1 billion at the end of 1989. Poland, in contrast, ran a current account deficit of US\$1.8 billion in 1989 and ended the year with much lower reserves--US\$2.5 billion (much of which was not useable as pledged against obligations). In addition, in Yugoslavia the excess demand for foreign exchange at the official rate was mild, as suggested by a barely positive black market premium (figure 2). In Poland, the black market premium was still very large in 1989, despite the real devaluations after 1987. The size of the premium there reflected the magnitude of the exchange rate misalignment and possibly some residual money overhang.

It is important to bear such differences in mind when examining the rationale for some of the preparatory measures taken in 1989, especially in view of the goal in the two programs of substantially reducing the exchange

Table 1

## Initial Conditions in Poland and Yugoslavia

	Poland	Yugoslavia
<b>BACKGROUND:</b>		
Inflation	640% in 1989.	2,700% in 1989.
Output Growth	1.4% in the 1980s, 0% in 1989.	0.7% in the 1980s, 0.8% in 1989.
Rate of Unemployment	0% in the 1980s, 0% in 1989.	13% in the 1980s, 14% in 1989.
<b>OTHER CONDITIONS IN 1989:</b>		
GNP	US\$ 66.2 billion.	US\$ 67.0 billion.
Current Account	US\$ 1.8 billion deficit.	US\$ 2.4 billion surplus.
Gross Debt	US\$ 40.6 billion.	US\$ 17.3 billion.
Reserves	US\$ 2.5 billion.	US\$ 6.1 billion.
Black Market Premium	400% average in 1989 40% before the plan.	10% average in 1989 30% before the plan.
Fiscal/ Enterprise Balance	Fiscal deficit of 7.2% of GNP.	Fiscal surplus of 0.7% of GNP.  Enterprise losses of 15% of GNP.  Central Bank Losses of 4-5% of GNP.  Large volume of non-performing loans.
Seignorage	13.5% of GNP.	12% of GNP.
Ratio of M3 to GNP	47.8%	33.1%
Share of FX deposits in M3	69.3%	69.5%

**Table 2. Total Fiscal Revenues in Poland and Yugoslavia, 1985-89<sup>a</sup>**  
(percent of GDP)

	1985	1986	1987	1988	1989
Poland	n.a.	49.4	46.9	48.0	40.8
Yugoslavia	33.7	38.2	34.5	33.5	34.7

n.a. Not available.

a. Using a broad definition of the public sector in both countries.

Source: The World Bank.

rate and trade controls. As shown in figure 3, both countries devalued their currencies in real terms in November and December 1989. However, in the case of Poland, the more adverse external conditions and the large exchange rate misalignment dictated the need for much sharper real devaluations. The same factors seem to explain why Poland restricted the introduction of convertibility to current account transactions, while in Yugoslavia convertibility was also extended to the capital account.

Both countries adjusted public sector prices at the end of 1989. However, in Poland some of the administered prices were so low that even after the very sharp corrections made in that period (100 percent increase in energy prices in October), the prices remained substantially below international levels and had to be further corrected at the start of the program.

The two countries shared a severe problem of excess personnel in the enterprise sector. In the case of Poland, the extent of the problem is indicated by a rate of unemployment barely above 0 percent throughout the 1980s. In Yugoslavia the rate of unemployment was around 14 percent in 1989, a slight increase over the 13 percent average for the whole decade. Although this higher rate of unemployment (concentrated on new entrants) in Yugoslavia seems to rule out the existence of overstaffing, a major cause of enterprise losses was indeed excess personnel, estimated to have reached 20 percent of the labor force in 1988 (Mencinger 1989).

Figure 3

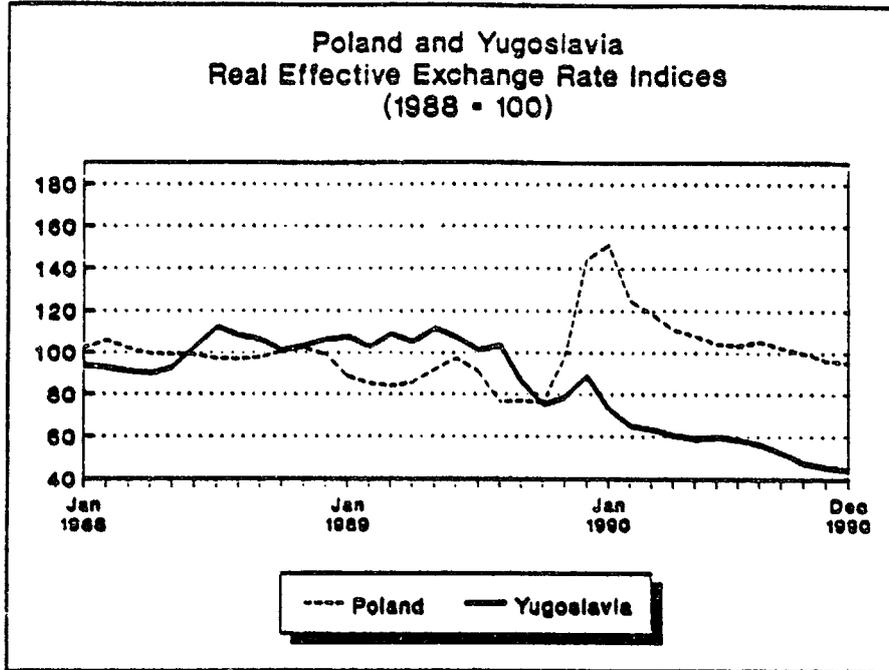
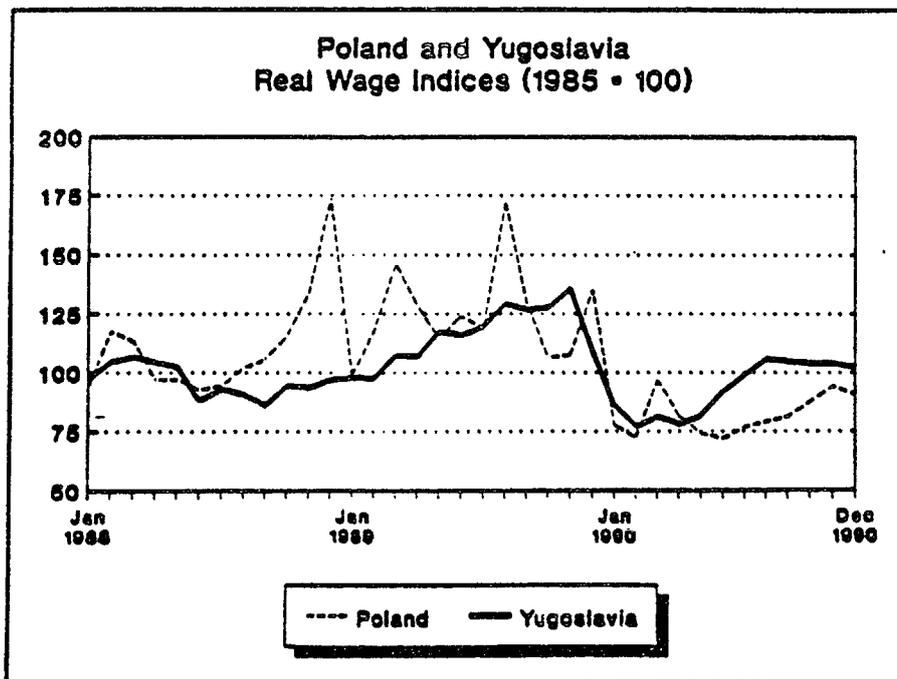


Figure 4



The two countries also shared a problem of flight from domestic assets and increasing velocity. While hardly a novelty in high inflation countries, in both countries the payment of negative real interest rates on domestic deposits--a policy designed to provide subsidized credits to enterprises--accelerated the flight from domestic assets. In addition, the foreign exchange deposits in the financial systems of both countries are also likely to have facilitated the shift out of domestic money. Between 1980 and 1989 the share of foreign exchange deposits in M3 increased from 20 percent to 69 percent in Poland and from 30 percent to 65 percent in Yugoslavia. In 1989 the ratio of M3 to GNP in Poland and Yugoslavia had declined to 47 percent and 33 percent, respectively.

#### A Comparison of the Two Stabilization Programs

A summary comparative description of the Polish and Yugoslav stabilization programs is provided in table 3. On first examination, the two programs look strikingly similar. The income policy components are basically the same, including: (1) a temporary freeze on the exchange rate that both countries extended to one year; (2) wage controls (with a complete freeze in Yugoslavia and partial indexation with very low coefficients in Poland); and (3) a temporary freeze on public sector prices.<sup>3</sup> However, note that Yugoslavia made all its price corrections before the start of its program, whereas Poland made large corrections to its energy prices (400 percent) on January 1, 1990.

Both programs included a significant fiscal adjustment--7 percent and 5 percent of GNP in Poland and Yugoslavia, respectively. In the case of Poland, the adjustment was designed to close the fiscal deficit, whereas in Yugoslavia it was essentially designed to cover new, non-traditional expenditures. These included the quasi-fiscal operations of the central bank (servicing of foreign liabilities and subsidies to favored sectors), transfers to the bank

---

<sup>3</sup> In July both countries made some adjustments to the administered prices.

Table 3

## Sumarized Description of the Polish and Yugoslav Programs

	Poland	Yugoslavia
<b>Incomes Policy</b>	3-month freeze on the exchange rate (Dollar), after large adjustment in December. Later extended to 1 year.	6-month freeze on the exchange rate (Mark), after some adjustment in December. Later extended to 1 year.
	Partial and lagged wage indexation, with very small coefficients.	6-month freeze on nominal wages.
	6-month freeze on energy prices, after large corrections in January.	6-month freeze on energy and other public sector prices (20 % of CPI), after corrections in December.
<b>Fiscal Policy</b>	Expected fiscal adjustment of 7% of GNP.	Expected fiscal adjustment of 5% of GNP.
<b>Monetary Policy</b>	Controls on Net Domestic Assets of the Banking System.	Controls on Net Domestic Assets of the Central Bank.
	Setting of discount rate at 36% p.m. in January, from 7% in December.	Setting of discount rate at 23% p.a; Full liberalization of other interest rates.
<b>Exchange and Trade Policies</b>	Partial Convertibility (current account only).	"Full" Convertibility (some capital restrictions have remained).
	Elimination of quotas and relaxation of licenses.	Reduction of quotas and relaxation of licenses.
<b>Enterprise/ Bank Reform</b>	Enforcement of bankruptcies through "dividend tax".	Enforcement of bankruptcies through 60-day tolerance limit for arrears.
	Evolving plans for enterprise restructuring and privatization.	Bank restructuring program. Evolving plans for enterprise restructuring and privatization.

restructuring program and the social program, and coverage of some enterprise arrears.

Both programs set targets for the growth of net domestic assets. In the case of Poland, the net domestic assets of the banking system were to grow at 20 percent in the first quarter and 8 percent in the second, whereas in Yugoslavia, these assets were to expand at slightly negative rates in the two first quarters. Both programs allowed for the monetization of foreign exchange inflows.

A first reaction to these figures might be that the monetary program in Yugoslavia was much tighter. However, two critical factors necessitate modifying this conclusion. First, the Polish program allowed for an increase in domestic credit in anticipation of the price jump that would result from the large correction in energy prices in January 1990, a jump that later proved to have been severely underestimated. Second, the Yugoslav program was preceded by a substantial real monetary and credit expansion in December. As shown in the next section, these and other factors resulted in a much tighter monetary stance in Poland.

Both programs called for a substantial relaxation of the exchange rate and trade controls, although Yugoslavia maintained some quota restrictions (amounting to 12 percent of total imports). Yugoslavia also introduced full currency convertibility, while Poland restricted convertibility to current account transactions.

Interruption of the explicit or implicit subsidization of inefficient enterprises and free operation of the Darwinian-Schumpeterian law of natural selection were implicit in both programs. Thus, the programs contained measures to preclude enterprise recourse to inter-enterprise credits and arrears,<sup>4</sup> so that inefficient enterprises would be forced into bankruptcy. In the case of Yugoslavia, a limit of 60 days of arrears was established as the trigger for bankruptcy procedures. The government was able to enforce

---

<sup>4</sup> A common phenomenon in socialist countries that is known to weaken the power of monetary policy considerably.

this rule by means of a centralized system of payments among enterprises and banks. In Poland, enterprises were ordered to pay dividends to the government based on the book value of their funding capital.

The two governments announced plans to restructure and privatize enterprises and banks. Yugoslavia issued a banking restructuring program, to be managed by a bank rehabilitation agency and supported by budgetary resources. Although the agency was created in mid-1990, enterprise restructuring moved slowly, pending the establishment of regional specialized institutions. In addition, the strategy for linking restructuring and privatization was still being debated during the course of 1990, partly as a result of different positions among the various republics.

In Poland, the government made a commitment to a large-scale privatization plan at the start of the program, and the legal framework for the plan was spelled out in a privatization law passed in July 1990. However, the legislation was "enabling" rather than "programmatic." Thus, no significant cases of bankruptcy (40 to 50 minor cases of bankruptcies occurred), restructuring or privatization were observed in the first nine months following the initiation of the program. The recognition that further delays in the privatization process could ultimately jeopardize the success of the program, led to the introduction of a much more ambitious plan in December 1990. The objective of the plan is to privatize 50 percent of industry in three years. To this end, the plan relies on a free distribution of vouchers to the public and the creation of financial intermediaries to control the enterprises (see Frydman and Rapaczynski 1990). Before moving on to an examination of the initial results, some comments about the implementation of the heterodox programs in the two socialist countries are in order. Incomes support to stabilization is commonly justified on the grounds that it reduces the unnecessary losses in output that are usually associated with purely orthodox programs. The possible reasons for these losses have been investigated extensively, including imperfect information (Lucas 1973), long-term or staggered wage contracts (Fischer 1977 and Taylor 1979), backward wage

indexation, coordination problems (Dornbusch and Simonsen 1988) or monopolistic price setting (e.g., Rotemberg 1987 and Blanchard and Fischer 1989).

Although the microfoundations of socialist and market economies are clearly different, the case for including incomes policy in the stabilization programs of the former may be even stronger. In addition to the importance of this policy in breaking the inflationary inertia in the Yugoslav and Polish economies (both countries formalized backward indexation rules in the late 1980s), it has a role to play given the absence of markets for both labor and capital, and it can counterbalance the influence of the workers' councils in wage determination. Under these conditions, the link between aggregate demand policies and the short-run behavior of wages and prices is likely to be weaker than in market economies,<sup>5</sup> making stronger the case for nominal anchors.

#### Examination of the Initial Results

Analysis of the initial results of the two programs reveals two well-defined periods. During the first semester both programs achieved a substantial reduction in the rate of inflation, as shown in figure 5. In the case of Yugoslavia, the monthly inflation rates were reduced to zero at the end of the semester, while in Poland they were around 3-5 percent.<sup>6</sup> The performance of both programs was more mixed after June. In the case of Poland, monthly inflation remained at around 5 percent, proving more persistent than anticipated. In Yugoslavia, there was a revival of inflationary pressures, as indicated by monthly inflation rates ranging between 3 and 8 percent in the second semester. Therefore it is useful to

---

<sup>5</sup> This point is acknowledged by Kornai (1990), who also stresses the importance of wage controls in the initial phase of reform programs. See also Rocha (1991) for evidence on the absence of the Okun relationship in Yugoslavia.

<sup>6</sup> The newly computed calendar indices for both countries show that inflation actually declined faster than indicated by the regular indices. The calendar indices are provided in table 4 and in the two appendices.

examine first the results for the first semester and then to identify the main problems that emerged during the second semester.

A sharp contraction in economic activity followed the implementation of the two programs in both countries, as shown by the deseasonalized indices of industrial production in figure 6. The decline in industrial production during 1990 was much more pronounced in Poland (-20 percent, with a decline in socialized sector production of about 28 percent and an increase in private sector production of about 24 percent) than in Yugoslavia (-10 percent). Although the post-stabilization recession was severe in both countries, it should also be noted that the decline in economic activity cannot be blamed entirely on the stabilization, since it started in the second semester of 1989, after a "peak" of activity in the first half of that year.<sup>7</sup>

The more severe recession in Poland was also reflected in the relative behavior of imports and the trade balance in the two countries, although in this case a number of other factors were also at work, most notably the sharper pre-plan real devaluation in Poland (figure 2). The immediate import contraction was more severe in the Polish case, as shown in figure 7. In addition, it was not followed by a recovery, unlike the case of Yugoslavia. Whereas the Polish trade balance shifted into a surplus, in Yugoslavia the trade deficit increased.<sup>8</sup> The first reason for this difference in output performance was the much stronger direct supply shock arising from the increase in input prices in Poland. A second likely reason is the tighter monetary stance in the Polish program in the first semester, even though a first inspection of the two monetary programs suggests otherwise. Figure 8 illustrates the differences in the quarterly evolution of the real stock of money (M1 and M3) in the two countries. Between December 1989 and June 1990,

---

<sup>7</sup> It appears that private sector activity is more reflected in the Polish figure than in the Yugoslav figure. If this is true, the difference in output performance may be larger than indicated.

<sup>8</sup> The large current account surplus in Yugoslavia is generated from workers' remittances and tourism.

real M1 grew by 50 percent in Yugoslavia and 15 percent in Poland, as measured by calendar price indices. In the case of M3, the difference is also large. There was a decline of only 5 percent in Yugoslavia versus 40 percent in Poland.<sup>9</sup>

In the second semester the situation is somewhat different. The process of remonetization continues in Poland and is reversed in Yugoslavia. As discussed in more detail below, that reflects essentially excessive credit expansion in Yugoslavia in the second semester, resulting in a revival of inflation and a loss of foreign reserves.

The comparative evaluation of the two monetary programs in the first semester centers on four major points. First, in Yugoslavia, all exchange rate and price corrections were carried out before the plan and were smaller in magnitude than those in Poland. Therefore, the subsequent impact on prices was also smaller. In Poland, the various prior price and exchange rate adjustments combined with the large increase in energy prices in January 1990 (400 percent) resulted in a price increase in January whose magnitude (100 percent from the beginning to the end of the month) was not anticipated by the monetary program.

Second, as mentioned above, the Yugoslav monetary program was preceded by a large real increase in the stock of base money in December 1989 (25 percent), resulting from increased domestic credits and some increased foreign exchange inflows in the last two weeks of the year. This growth in the pre-plan stock of money was not observed in Poland.

Third, the net domestic assets of the central bank of Yugoslavia during the first semester behaved according to the program--basically flat in nominal terms. In the case of Poland, the net domestic assets of the banking system did not rise to the targeted level, essentially because of the better than expected budgetary performance. There was no attempt to divert credit within the ceilings to the enterprises.

---

<sup>9</sup> The real decrease in the Yugoslav M3 is a somewhat stronger 12 percent when the foreign exchange assets held abroad by Yugoslav enterprises are included. However, it is still a much smaller decrease than in Poland.

Fourth, large inflows of foreign exchange resulted in a substantial increase in the net foreign assets in both countries. In the case of Poland, the inflows were generated in the trade account, while in the case of Yugoslavia they were generated by increased workers' remittances and the repatriation of foreign exchange assets held abroad by enterprises. Although the increase in net foreign assets was even greater in the case of Poland, the other factors, most notably the price jump in January, produced a much more severe monetary crunch.

The conclusion that monetary policy was tighter in Poland based on a comparison of real money stocks may not be valid, however, since it implicitly assumes that the real demand for domestic money was equally strong in the two countries. The large price shocks at the start of the program in Poland may initially have created adverse expectations that lowered the demand for money. In any case, the above comparison reveals interesting differences in the design of monetary policy in the two programs. In particular, it shows the desirability of carrying out all price corrections before establishing the monetary targets. Another interesting point is that in neither country did households convert their stocks of foreign exchange deposits into domestic currency deposits, despite the frozen exchange rate and higher interest rate on domestic deposits. In the Israeli stabilization program such a conversion constituted an important source of non-inflationary monetary expansion (Liviatan 1988). The absence of conversion in Poland and Yugoslavia could signal an initial lack of credibility of the program, particularly of the exchange rate policy.<sup>10</sup>

---

<sup>10</sup> In both countries, the decline in the share of foreign exchange deposits in broad money was almost entirely due to the real increase in the stock of domestic money.

Table 4

## Results of the Polish and Yugoslav Programs During 1990

	Poland	Yugoslavia
Inflation (Dec.-Dec.)	1989: 640% 1990: 250%	1989: 2,700% 1990: 120%
Output Growth	Industry: -20.0% GDP: -12.5%	Industry: -10.5% GDP: -7.5%
Rate of Unemployment	1989: 0% 1990 (December): 6.1%	1989: 14.2% 1990 (mid-year): 14.9%
Trade Balance	1989: US\$0.2 billion surplus 1990: US\$2.2 billion surplus	1989: US\$ 1.5 billion deficit. 1990: US\$ 4.7 billion deficit.
Current Balance	1989: US\$1.8 billion deficit 1990: US\$0.7 billion surplus	1989: US\$ 2.0 billion surplus. 1990: US\$ 2.7 billion deficit.
Reserve Position	Dec. 1989: US\$ 2.5 billion June 1990: US\$ 3.9 billion Dec. 1990: US\$ 6.8 billion	Dec. 1989: US\$ 6.1 billion June 1990: US\$ 8.6 billion Dec. 1990: US\$ 6.7 billion
Black Market Premium	Reduced to zero.	Reduced to zero in December. Increased to 20% during the year.
Monetary Aggregates	Cumulative Real Changes: M1 M3 Dec.-June: -15% -42% Dec.-Dec.: 58% -42%	Cumulative Real Changes: M1 M3 Dec.-June: 49% -5% Dec.-Dec.: 40% -20%
Share of FX deposits in M3	Dec. 1989: 69% June 1990: 42% Dec. 1990: 31%	Dec. 1989: 65% June 1990: 51% Dec. 1990: 46%

Figure 5

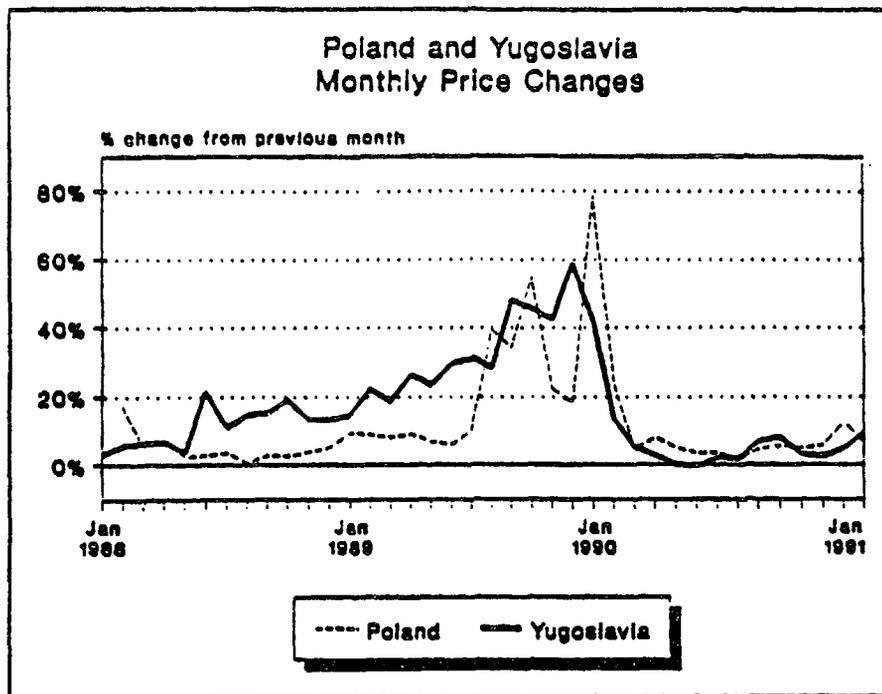


Figure 6

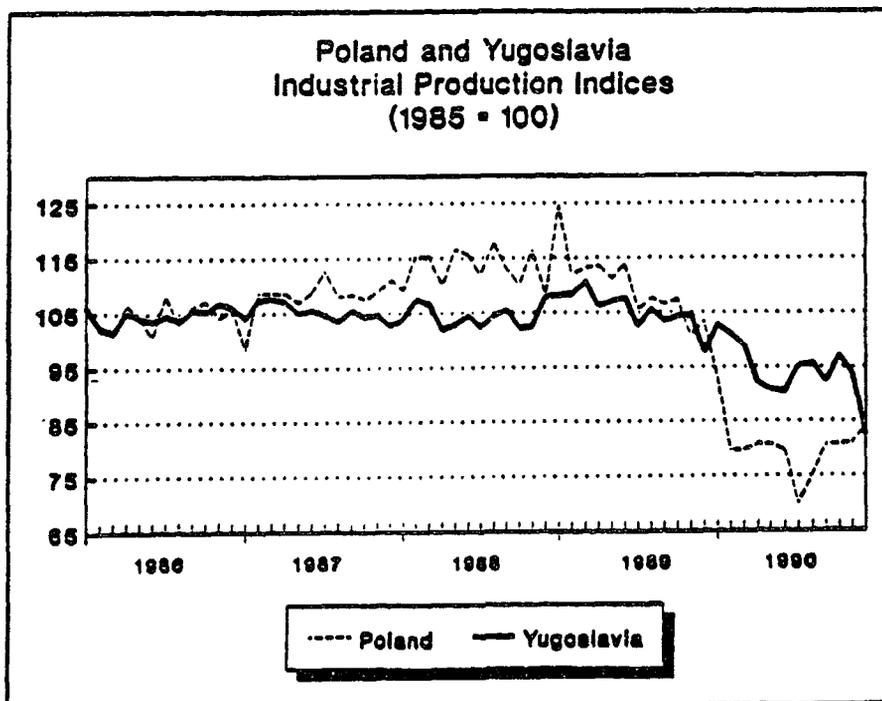


Figure 7

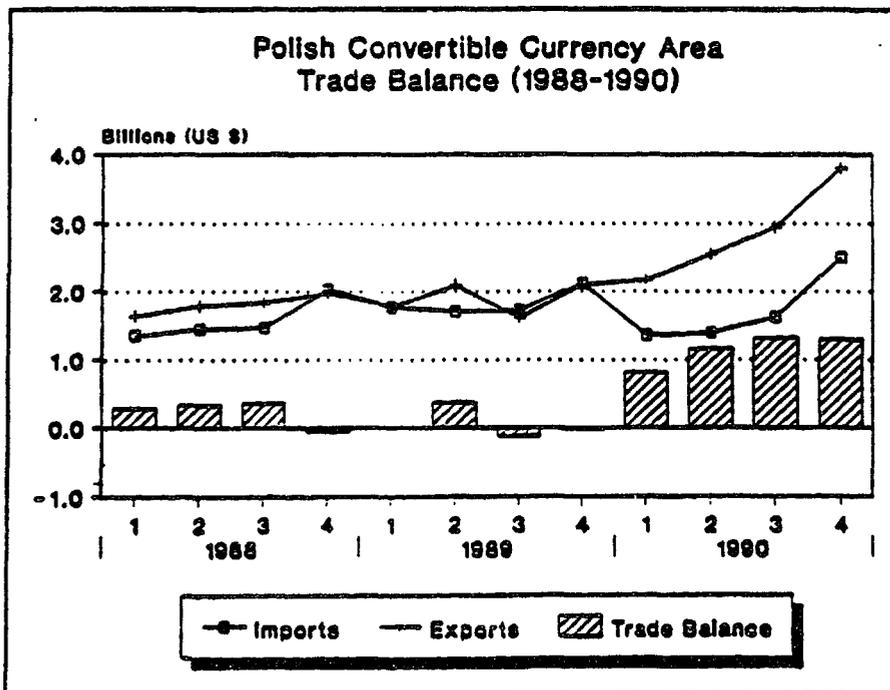
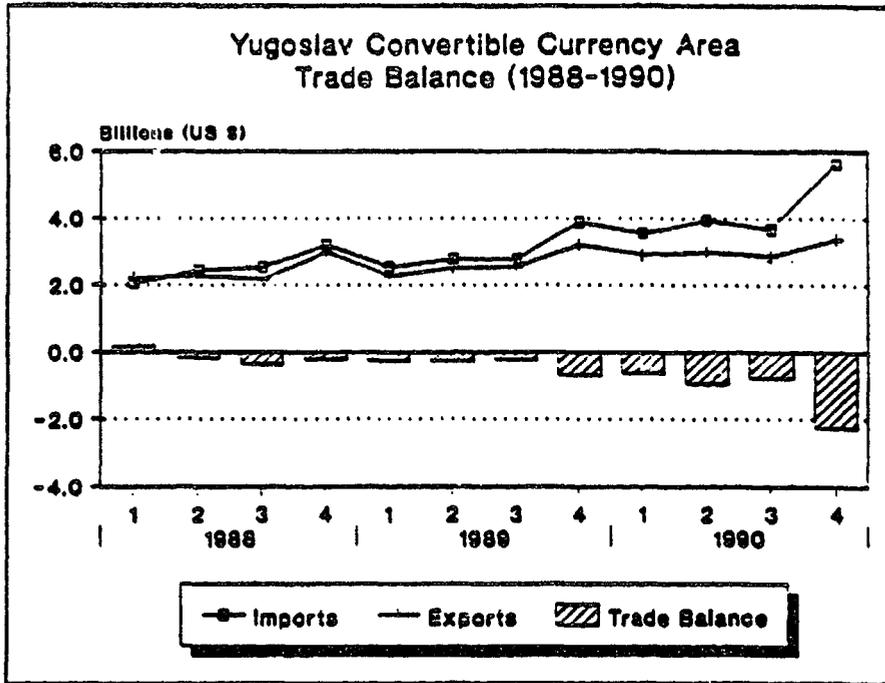
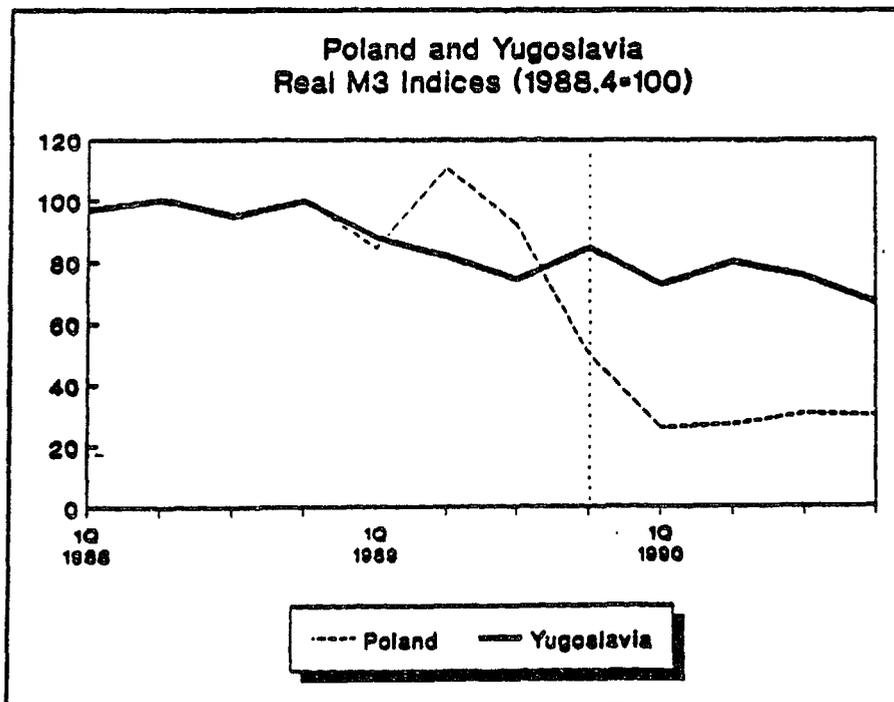
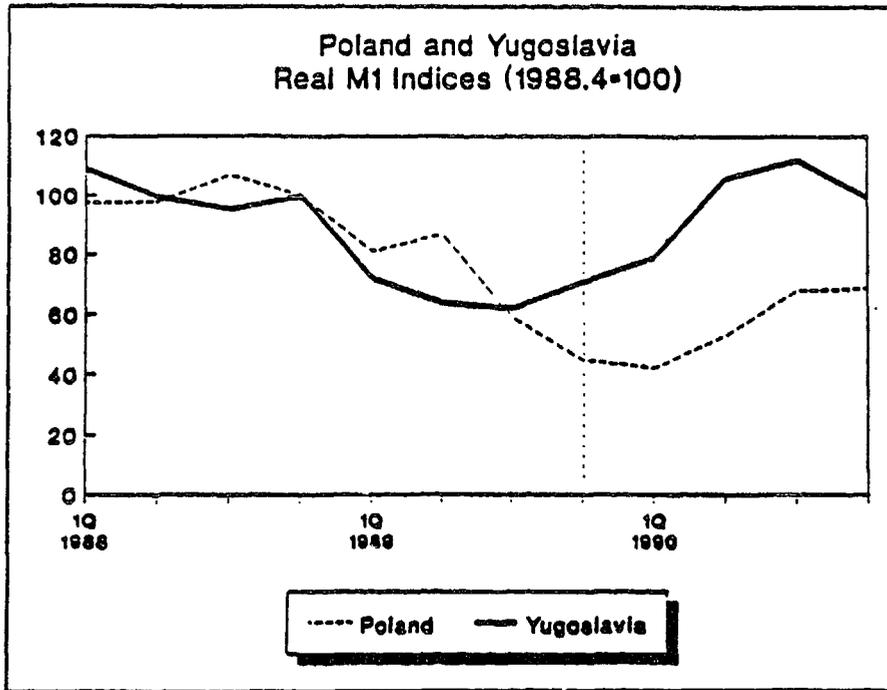


Figure 8



It is natural to look at nominal interest rates as an indicator of liquidity conditions that result from an immediate contraction in the supply of money and the reshuffling of the portfolios of asset holders. However, in both countries the exogenously determined discount rates influenced the determination of interest rates considerably, making them poor indicators of liquidity conditions. In Yugoslavia, interest rates on short-term deposits were relatively stable during the year (10-15 percent per year), in spite of the large fluctuations in monetary conditions in this period. In Poland, short-term deposit rates moved from 15 percent per month in January and February to 5-6 percent per month in the following months, becoming slightly positive in real terms. Lending rates were much higher in both countries, but that situation to a large extent reflects the non-performing loans in the banks' portfolios, and not just liquidity factors. Finally, the real devaluation in Poland may also account for the stronger initial contraction of activity relative to Yugoslavia.<sup>11</sup> Indeed, the first indications are that the unambiguously adverse supply-side effects of a real devaluation were not offset by expansionary effects on the demand side. In the traded goods sector, it is unclear whether the increase in foreign demand offset the contractionary supply-side effects. In the case of non-traded goods, it is most likely that the demand-side effects were also contractionary. The wealth effect was largely negative, as indicated by the 40 percent real decrease in M3, while some redistribution of real income from wages to profits is also likely to have depressed demand.<sup>12</sup>

A complete comparative evaluation of the initial results of the stabilization programs requires a more detailed analysis of the impact of policies on real incomes in the two economies. In both countries, there was a

---

<sup>11</sup> In the case of Yugoslavia, the real exchange rate in the first quarter of 1990 had already appreciated relative to the level in December.

<sup>12</sup> The evaluation of the net impact of a real devaluation on output is complicated by the notorious multiplicity of channels (see Lizondo and Montiel 1989 for a recent survey). When the devaluation is carried out in the context of a stabilization program, it is further complicated by the simultaneous implementation of other policies.

substitution of explicit taxes for the inflation tax. However, the increase in explicit taxation was smaller than the volume of inflationary taxation in 1989, especially in Yugoslavia. When this factor is looked at in isolation, there seems to have been an increase in the net real income of households and enterprises. However, real wages also fell substantially in the two countries (figure 4). In part the reason was the removal of the credit subsidies for enterprises. Thus the decline in real wages indirectly reflects the elimination of inflationary financing of enterprise losses.

It is difficult to assess the net impact of these factors on real incomes. In addition, the situation is likely to be highly differentiated across households and enterprises. While the real wage adjustment may have allowed several enterprises to operate without a loss (without meaning that they became efficient), in other cases there would still have been a loss even with a further substantial reduction in the real wage. In fact, during the first semester the wage ceilings became non-binding for several enterprises in both countries. The tightening of credit during the first semester had a strong impact on the enterprise sector. In Yugoslavia, 7,000 enterprises had difficulty making payments to banks and other enterprises, 3,000 had accumulated arrears for 30 days and 350 were declared bankrupt. A large number of enterprises was reported to have interrupted their wage payments (especially in May) to postpone bankruptcy. At the end of the first semester the situation was, however, highly differentiated, with a group of enterprises increasing wages above the ceilings and another group unable to make wage payments within the ceilings.

Pressure to relax the monetary policy mounted in the first semester and led to a relaxation after June. The shift to a relaxed monetary stance was achieved mostly through the implementation of measures to increase the multiplier. These measures produced a rapid increase in the stock of bank credits after June (figure 9). The easing of monetary policy led to further increases in wages and contributed to a revival of inflation in the second semester. It also aborted the expected shake-out of the industrial sector by

keeping loss-making enterprises afloat and allowing them to resume wage payments.

Concern over the revival of inflation led the central bank to return to a tight monetary stance in early October. However, pressed by enterprises to continue lending, commercial banks reduced reserves below the required levels, thereby weakening the central bank's control over monetary policy.<sup>13</sup> Further evidence of the difficulties faced by the central bank to conduct monetary policy was the unusual episode of December 1990, whereby one regional branch of the central bank expanded credits by US\$1.8 billion equivalent of Dinars to finance the payment of wages and pensions (The Economist, January 12, 1991) in the region, without notification to the board of governors. The monetary impact of the domestic credit expansion was largely offset by a substantial loss of foreign reserves during the same period. However, these events raised obvious doubts about the sustainability of the stabilization program.

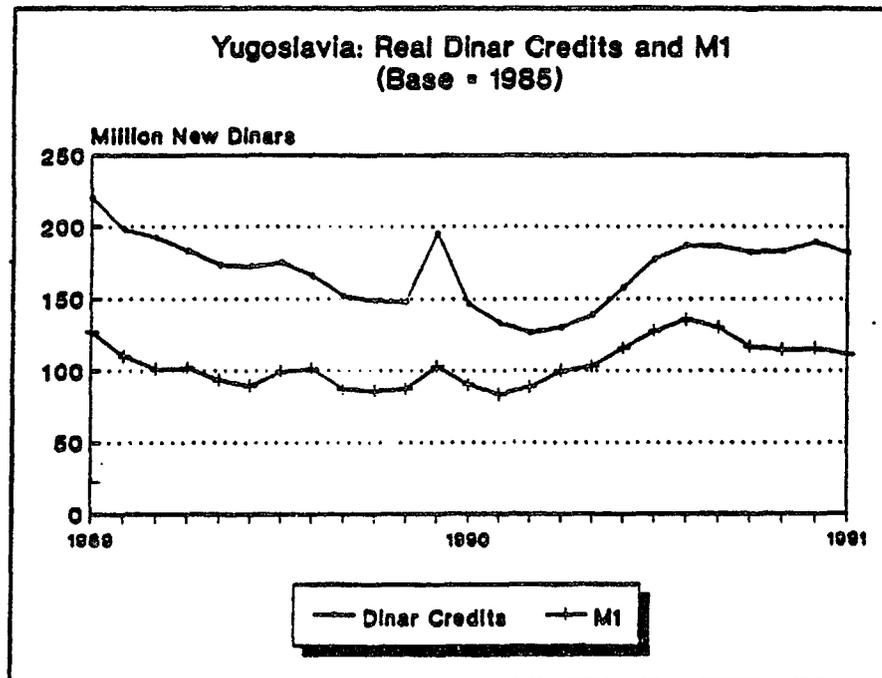
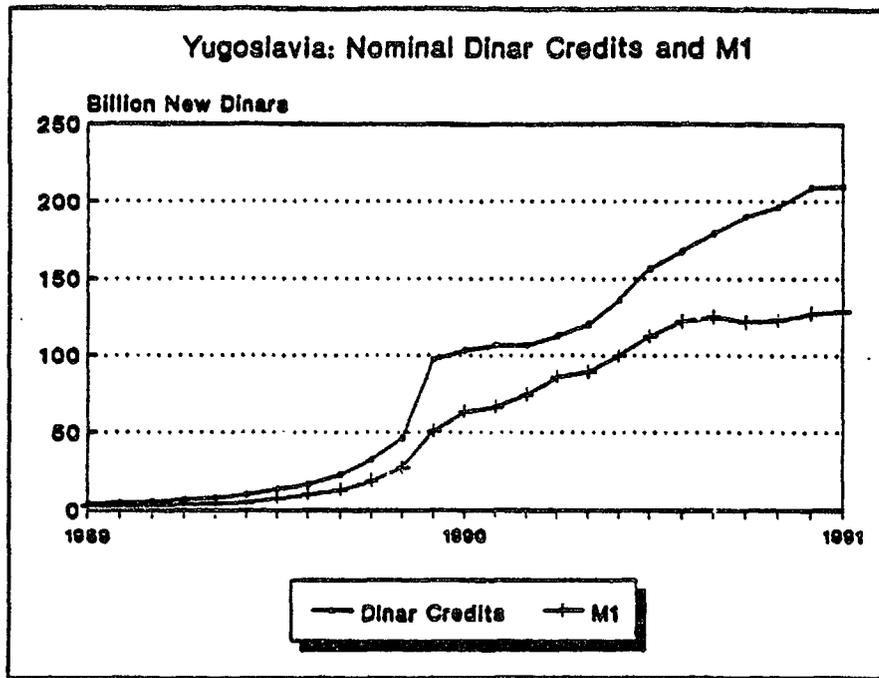
In Poland, despite the sharp contraction in industrial output, no bankruptcies occurred. Nor did the expected shake-out of the industrial sector, with inefficient enterprises sinking under the pressure of the elimination of subsidies, take place.<sup>14</sup> The Darwinian-Schumpeterian process of natural selection did not operate. As noted, the main trigger mechanism for bankruptcy procedures is a failure to pay the dividend tax. The appropriateness of this mechanism as the main trigger for restructuring and/or bankruptcy is, however, questionable. First, the tax was not burdensome (around 6 percent of total profits). Second, many enterprises paid the dividend tax while also failing to meet obligations with other enterprises and banks. However, neither creditor firms nor the banks initiated bankruptcy

---

<sup>13</sup> This problem has arisen as a result of the control exercised on the banks by the enterprises.

<sup>14</sup> An interesting simulation by de la Calle (1990), based on data on domestic resource costs computed by Konovalov (1989a), estimated that the stabilization program would have led to a contraction of about 20 percent in industrial output, a contraction led by the bankruptcy of enterprises in particularly inefficient sectors. His predictions on the sectoral fall in output display a recession much more uneven than the one that actually took place.

Figure 9



procedures, implying some sort of collusive behavior among firms and banks. The inefficiencies arising from these inter-linkages among enterprises is one of the main issues that has to be tackled in the second stage of the program.

Both fiscal and credit policies were relaxed after July, in an attempt to stimulate the economy. The relaxation of credit policies opened the way to a significant increase in real wages and contributed to a certain revival of inflation. In an attempt to reduce these inflationary pressures, credit policy was tightened in the fourth quarter, with the imposition of strict ceilings on each commercial bank on credit to the socialized sector. However, the overall credit expansion largely exceeded the targets, mainly because of a sharp expansion of credit to the non-socialized sector, which was exempted from the ceilings. Despite the tightening of credit to the socialized sector, wage pressures in this sector remained unabated, revealing the difficulties in containing wages under the present ownership structure.

Developments in 1990 raise a more general issue: under the present structure of these economies, macroeconomic policies alone cannot generate an efficient natural selection. Inter-enterprise credits link "good" and "bad" enterprises, opening the way for chain of bankruptcies involving "good" enterprises. Also, if the banking system is inefficient and, in the case of Yugoslavia, controlled by enterprises, resources are not necessarily channelled to the more efficient uses. Under these conditions, the attempt to enforce hard budget constraints may result in a generalized credit crunch--as seems to have happened in the first semester of 1990 in Poland--with unclear effects on efficiency.

#### **Assessment of the Main Issues**

The issues that policy-makers in Poland and Yugoslavia will have to address include some that belong to the stabilization component per se and others that are of a structural nature. In the first group, the most important issues are the unfreezing of the exchange rate, the introduction of a new wage policy and the adequacy of the fiscal support for the restructuring component of the two

programs. This group also includes the need to reduce the servicing of external debt in order to avoid a drain of scarce resources that ideally should be channelled toward the restructuring of the economy. The second group comprises the restructuring and privatization of enterprises and banks and the developments of the labor and financial markets.

Recognition that the real exchange rate in Yugoslavia had severely appreciated led to a 30 percent corrective devaluation in January 1, 1991. In the case of Poland, the real appreciation is probably not so severe as in the case of Yugoslavia, given the large real devaluation at the start of the program. Obviously, if inflation does not quickly subside, the extent of the real appreciation is likely to become unsustainable during 1991.

Although the exchange rate correction in Yugoslavia seemed unavoidable, given the rapid loss of foreign reserves at the end of 1990, it did result in increasing rates of inflation at the start of 1991 (5 and 10 percent in January and February, respectively). This increase in inflation happened despite the introduction of a new package of measures designed to contain the impact of the devaluation, which included a freeze on nominal wages paid by loss-making enterprises, and new regulation designed to prevent other episodes of monetary decontrol. Success at preventing the reemergence of an exchange rate-wages-prices spiral will obviously depend on more effective implementation of wage and monetary policies, requiring a high degree of consensus among the various republics.

Despite the present uncertainty regarding the continuing implementation of these measures, they do reflect the recognition that some form of wage policy is needed, especially while labor markets are not sufficiently developed and the ownership rights problem is not adequately solved. The design of a wage policy for the transition is indeed a difficult task. On the one hand it has to counteract the excessive influence of the workers' councils. On the other hand, it should minimize the inefficiencies arising from strict and generalized wage controls, which can hinder the recovery of economic activity.

This point is also relevant in the case of Poland, where a wage policy has been maintained for the first half of 1991. However, several changes were introduced. First, the control of wages shifted from the wage bill to the wage per worker, in order to eliminate constraints on expanding firms. Second, wage increases became conditional on profitability performance. Finally, private firms were excluded from wage ceilings and corporatized firms were partially exempted from tax penalties on wage increases above the ceilings. However, monthly indexation of wages still remains, with adverse effects on inflationary inertia.

Fiscal support for restructuring is another critical issue in the two countries. While the fiscal adjustment has proven sufficient to close the deficit in Poland and to absorb the central bank's deficit in Yugoslavia, it does not seem to be consistent with the intention of implementing a serious restructuring program in both countries. For instance, it has become clear that the fiscal commitments to the social program in Yugoslavia would have been inadequate had the loss-making enterprises really been forced into bankruptcy. The initial fiscal commitments to the financial restructuring also proved largely insufficient at the end of the year.

In the area of restructuring, a wide range of issues needs to be considered. At the level of each enterprise, restructuring entails laying off excess personnel, writing off debts in justified cases, making selective investments capable of improving the efficiency of existing capital, changing management and so on. It also entails closing enterprises that cannot become profitable even with the above measures. At the level of each bank, restructuring involves a detailed evaluation of its portfolio, the removal of bad loans from the portfolios, a severing of the links between banks and enterprises, and the introduction and enforcement of prudential financial regulation and supervision. A crucial question related to the restructuring of the enterprises and banks is who will be in charge of this formidable task and under what system of incentives. An approach to restructuring that is excessively centralized and excludes privatization may not only prove too slow

to implement, given the institutional deficiencies, but may also produce an undesirable selection of enterprises and sectors for restructuring. A more rapid move toward large-scale privatization seems to be required to minimize the risks of wasting resources during the restructuring and to enhance the prospects of a sustained supply response. (For a detailed discussion of this issue, see Hinds 1990, Lipton and Sachs 1990, and Frydman and Rapaczynski 1990.)

While forcing inefficient enterprises into bankruptcy is an important step in the right direction, in the absence of well-functioning labor and capital markets that permit an efficient reallocation of resources across firms and sectors, a large pool of unemployed could be generated for a protracted period. The impossibility of developing a true labor market without developing in parallel a market for capital again raises the issue of privatization (see Hinds 1990). In addition, the development of a labor market will require that policy-makers address the issues of housing ownership and financing, two notorious obstacles to labor mobility in socialist countries.

While Poland and Yugoslavia acknowledge the importance of these issues, they have been addressing them too slowly. Failure to provide prompt solutions to these problems could lead to a protracted stagnation of output and a return to high inflation. In this regard, the model of sequencing traditionally applied to Latin American countries, in which structural issues are relegated to later stages of the adjustment programs, does not seem to be applicable to reforming socialist countries, in which stabilization and structural reforms are much more closely intertwined.

STABILIZATION IN POLANDBackground

The Polish stabilization program of January 1990 is undoubtedly one of the most radical attempts to transform quickly into a market economy. In addition to the severity of Poland's macroeconomic situation, the government chose to pursue a "cold turkey" approach to stabilization (whence the label "Big Bang"), because of the disillusionment with the gradualist reform strategy followed in the 1980s. That strategy, which relied on increased enterprise decentralization but within a context of continuing state interference in the allocation of inputs, licensing of imports and exports, and determination of prices, had not provided visible improvements in efficiency. In fact, the partial decentralization of enterprise decision-making--reminiscent of the idea of "market socialism"--in a context of absent factor markets and persistent soft budget constraints actually contributed to a widening of the macroeconomic imbalances in the 1980s. Several rescheduling agreements of the external debt partly masked the severity of the external position and allowed Poland to grow at relatively high rates in the period 1983-88 and to maintain relatively high rates of investment growth (figure 1-1).

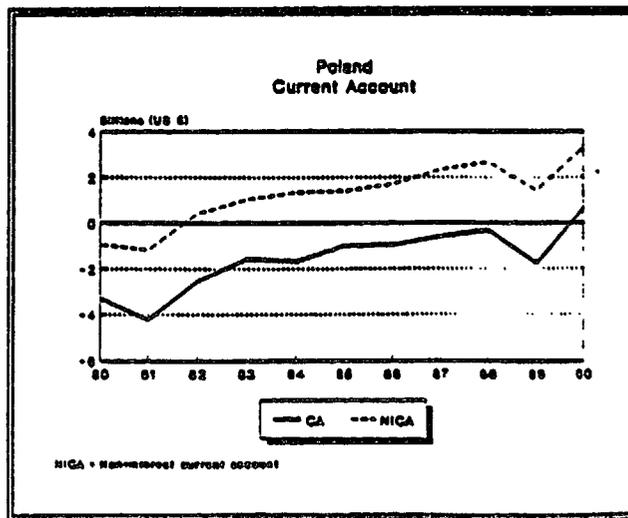
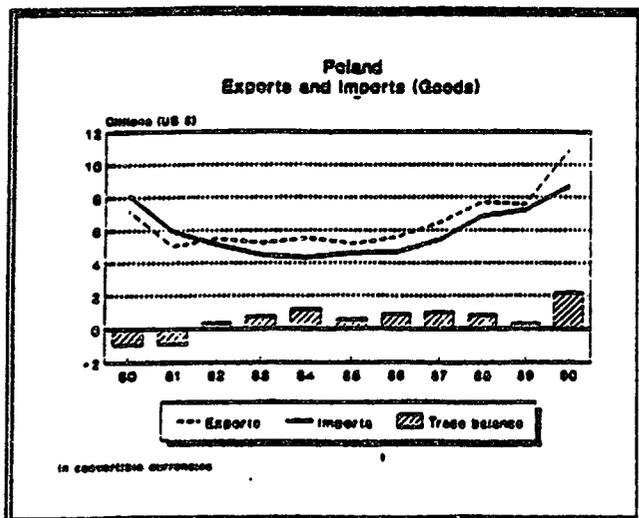
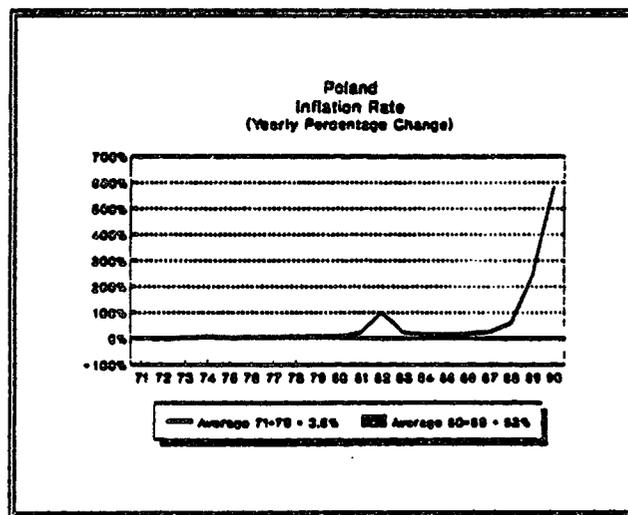
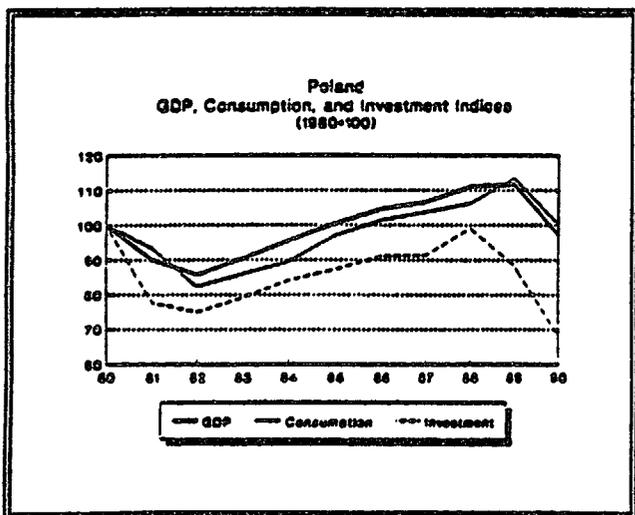
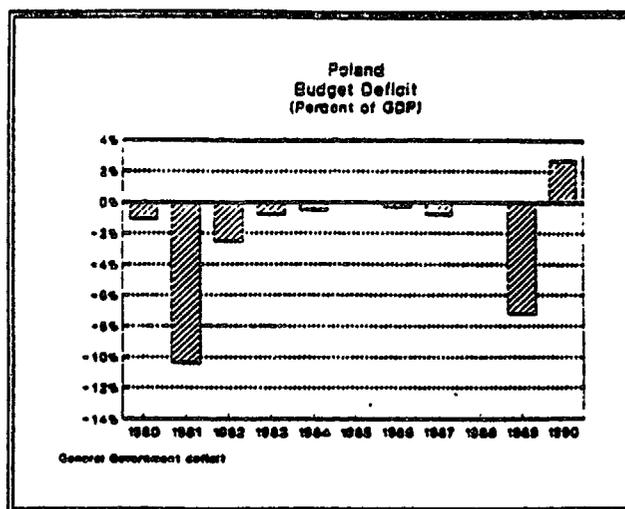
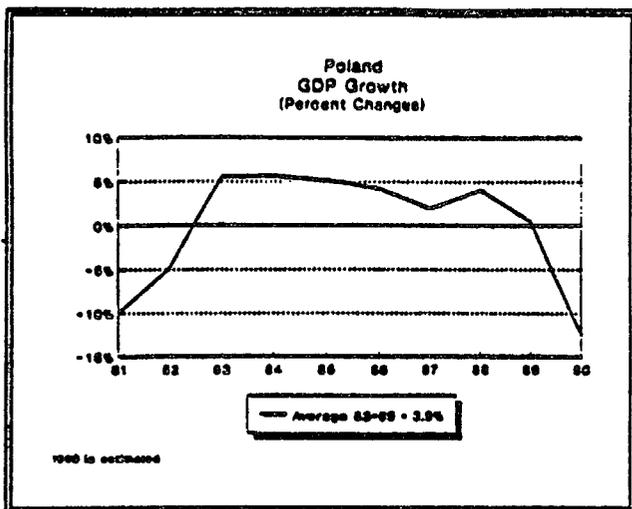
On the other hand, the rate of inflation averaged above 50 percent in the 1980s, a condition that prima facie put Poland in with the "chronic inflation" countries (figure 1-1).<sup>15</sup> However, the persistent inflation during the 1980s reduced significantly the stock monetary overhang, a point on which Poland's experience differed from the typical experience of the centrally planned economies with rigid price controls, such as Bulgaria and the Soviet Union. Accordingly, the underlying inflationary pressures in the 1980s arose, overall, more from flow than from stock factors (Lipton and Sachs 1990). In this regard, cost-push factors, such as the cost of labor and the prices of imports, played a fundamental role in the context of a price-setting system dominated by "cost-plus" behavior. However, the widespread price controls that prevailed until the end of 1989 and that affected about 50 percent of total retail sales complicate the analysis of inflation. Although repressed inflation does not seem to have been a "chronic" phenomenon in Poland in the 1980s, the mixed system of controlled and free prices tended to adjust slowly to excess demand and to generate large gaps between the controlled and free prices, with adverse effects on the budget. Thus, an inflation that behaved erratically, "stop-and-go" phenomena and the inertia elements in the catch-up between controlled and free prices were not only important features of Polish inflation in the 1980s but were also particularly important in the acceleration of inflation in 1989.<sup>16</sup> Large disequilibria did indeed precede the "corrective" jumps in the price level, mainly in 1982 and 1988-89, with

---

<sup>15</sup> The Polish rate of inflation in the 1980s was extremely high by European standards, even excluding 1989. The average for the period 1981-88 was 37 percent, compared with 5 percent for industrial countries, 38 percent for developing countries, 8 percent for Hungary and 1.3 percent for other Eastern European countries, excluding Yugoslavia.

<sup>16</sup> A macroeconomic analysis of the dynamics of inflation in a mixed system of free and controlled prices can be found in Commander and Coricelli (1990a).

Figure 1-1



relatively stable rates of inflation of 20 percent per annum inside the peaks, a rate that was high by European standards.

Preliminary econometric results confirm this pattern (table 1-1). The regression, which tries to separate cost-push factors from monetary disequilibria--as measured by the change in the ratio of household money to retail sales--indicates that, overall, cost-push factors were the main determinants of price inflation in the period 1983-89.

Table 1-1. Poland: Inflation in the 1980s  
Quarterly regression 1983-89)<sup>a</sup>

---


$$\text{DLCPI} = 0.72 \cdot \text{DLCPI}(-1) + 0.42 \cdot \text{DLWAGES} + 0.1 \cdot \text{DLOER} + 0.23 \cdot \text{DLM3/RS} - 0.63 \cdot \text{ECM}$$

(7.1)                      (7.1)                      (7.1)                      (2.8)                      (-3.5)

$$R^2 = 0.97; \quad DW = 1.33; \quad e = 0.0042$$


---

Note: DLCPI = the rate of inflation; DLWAGES = the rate of change in wages; DLOER = the rate of change in the official exchange rate; DLM3/RS = the change in the ratio of household broad money to retail sales; and ECM = the error correction term, defined as the difference between prices and costs (wages plus the exchange rate). The t-statistics in parentheses.

- a. The equation in the main text is part of a system estimation, in which prices and wages are simultaneously estimated.

Source: Commander and Coricelli (1990b).

However, if the coefficients in the above equation are used, in the period of accelerating inflation in 1988 up to the third quarter of 1989, monetary imbalances exerted important pressure on inflation. Indeed, 20 percent of the increase in prices in that period is explained by the monetary disequilibrium, while cost-push factors accounted for the remaining 80 percent, with 65 percent attributable to wages and 15 percent to the exchange rate.

The fact that inflation remained relatively high following the jump in the price level in 1982 suggests the presence of inertia elements in the inflation. These can be traced mainly to a de facto full indexation of wages to prices that operated throughout the period 1983-89 and, after 1985, to an exchange rate policy aimed at stimulating exports through continued "competitive" devaluations.

Discrete shocks to the price level, usually through a change in administered prices, tended to be translated into a persistent higher level of inflation. Thus, the system, with its generally accommodating monetary policy, lacked a nominal "anchor." In the mixed system of free and controlled prices, price controls proved to be a pure substitute for the missing anchor. Indeed, price controls had an adverse effect on the fiscal budget--as they implied subsidies--and with passive money this channel fueled inflation.<sup>17</sup>

---

<sup>17</sup> Commander and Coricelli (1990a) show several cases in which this mixed system of free and controlled prices, with "passive" money, can generate explosive rates of inflation.

The price controls gave rise to various types of subsidies to cover the difference between the price and production costs; the subsidies were channelled to both households and enterprises. Moreover, when the input subsidies were reduced through increases in the administered prices, especially those of energy--as, for instance, in 1988--sizable subsidies on interest rates cushioned the enterprises from these adverse supply shocks. Only in 1990 did this compensation disappear, with the simultaneous elimination of both types of subsidies.

In general, the system allowed the enterprise sector to register net profits in the aggregate without, as before 1989, large deficits for the consolidated government sector (including transfers for the service of the foreign debt). Therefore, a "pure" fiscal explanation of underlying inflation does not seem to be relevant to the Polish experience in the 1980s. Nevertheless, as noted, sizable hidden subsidies, mainly in the form of implicit subsidies for interest rates, were channelled to the enterprises, accounting for a significant portion of the seigniorage from money creation. According to some estimates, the interest rate subsidies amounted to an average of 6 percent of GDP in the period 1984-88.<sup>16</sup> The subsidies on interest rates thus allowed firms to operate with positive profits, compensating them for the high costs of the inefficiency in production, such as overstaffing and the generally high intensity of inputs in production, common symptoms of soft budget constraints.

The largely negative real interest rates on lending were accompanied by even more negative real rates on deposits. As a result, households increasingly shifted out of zloty-denominated assets and into foreign currency deposits (table 1-2). The base for the inflation tax was progressively reduced in the 1980s as the currency substitution advanced, a pattern that increased velocity in terms of M1 and reinforced the inflationary pressures--open or repressed--arising from the need to finance both the budget deficit and the hidden subsidies to the socialized sector.

During 1987-88, and then again in 1989, the authorities attempted to impose more stringent financial discipline on the enterprises by tightening bank credit. However, given the predominantly soft budget constraints, the attempts to enforce financial discipline through credit ceilings were largely ineffective, with enterprises bypassing the ceilings by extending credit to each other. The ratio of inter-firm credit to bank credit to the socialized sector went from about 50 percent at the end of 1987 to 70 percent at the end of 1988 and 155 percent at the end of 1989.

#### Preparation for the Stabilization Program and Other Developments in 1989

Two clearly distinct phases, separated by the change in government, characterized 1989. In the first, which corresponds to the first three quarters, there was a sharp deterioration in the macroeconomic situation. In the second, corresponding to the last quarter of 1989, when the new government was in power, there was a marked reduction in the fiscal and monetary disequilibria, paving the way for the stabilization program of January 1, 1990.

---

<sup>16</sup> Saldanha (1989). The interest rate subsidies were measured by the difference between the nominal rates for credit and the rate of inflation. However, when the inflation tax on the monetary holdings (currency plus demand deposits) of enterprises is netted out, the net subsidies in the period 1984-88 fall to about 2-3 percent of GDP.

Table 1-2. Poland: Monetary Indicators

	1984	1985	1986	1987	1988	1989
	(percent of GDP) <sup>a</sup>					
M1	--	20.1	19.5	18.5	14.6	10.1
Broad money	--	44.3	46.2	51.5	56.5	47.5
	(percent of broad money)					
M1	46.6	44.3	40.3	32.0	20.8	21.9
Currency	20.2	19.6	16.8	12.0	9.9	11.5
Quasi Money	53.4	55.7	59.7	68.0	79.2	78.1
Zloty	80.7	75.1	68.8	53.7	35.1	30.7
Foreign currency	19.3	24.9	31.2	46.3	64.9	69.3
Socialized sector	32.1	26.9	24.9	26.6	19.4	25.1
Non-soc. sector	67.9	73.1	75.1	73.4	80.6	74.9

a. Average stock, geometric mean.

Source: National Bank of Poland; International Financial Statistics

The first phase The wage push initiated in the second half of 1988 gained strength at the beginning of 1989, the result being sizable increases in real wages and a real appreciation. In addition, the budget deficit deteriorated sharply during the first half of 1989 because of a substantial decline in revenues and, to a lesser extent, increased expenditures.<sup>19</sup> The consolidated budget of the general government moved from an initial balance in 1988 to a deficit of 7.2 percent of GDP in 1989. It should be noted that 80 percent of the state's budget deficit (excluding extra-budgetary funds) in 1989 was accumulated in the first half of the year. The deficit was financed mainly through central bank credits and money creation.

Interestingly, the worsening of the "fundamentals" in the first half of 1989 did not immediately result in hyperinflation. In the first half of 1989 the monthly rate of inflation averaged 7 percent and did not accelerate during the period. The cumulative increase in prices was about 60 percent with respect to December 1989. This lack of synchronization between the acceleration of inflation and worsening fundamentals is consistent with the stop-and-go nature of the system with its widespread price controls, in which

<sup>19</sup> Note that wage push and budget deficits are directly linked through the wages of the public sector, which are tied institutionally to wages set in the socialized sector (see Gomulka 1990).

a widening of monetary imbalances generally precedes corrective price increases. That growing monetary imbalances were created in the first half of 1989 can be inferred from the rapidly depreciating exchange rate in the parallel market, a signal of a loss in confidence in the domestic currency. The share of foreign currency deposits increased from 65 percent at the end of 1988 to 71 percent at the end of June 1989.

The outburst in the rate of inflation occurred in August, when retail prices jumped to 39.5 percent from 9.5 percent in July. The liberalization of food prices in August at a time of significant excess demand caused a jump in those prices. Wage earners tried to catch up to the increased food prices by demanding higher wages, in effect indexing wages de facto to food prices, which were rising more than the average price level. This phenomenon may have contributed to further inflationary pressures in the non-food sector as well. Formal institution of a wage indexation rule in April and the policy of adjusting the official exchange rate to catch up with the black market exchange rate further increased the inflationary inertia. The official exchange rate, which had depreciated roughly in line with inflation in the first seven months (about 65 percent), was depreciated by 680 percent in the remaining months of the year, when the cumulative increase in inflation was 320 percent.

The second phase The new government, which took office in September, tried promptly to halt the deteriorating in the macroeconomic situation, instituting several measures to tighten credit policy, reduce the budget deficit, curb the wage increases and correct the prices of energy and other highly subsidized goods. The adjustments in the prices of energy produced an initial acceleration in inflation in October. A reduction of the periodicity of wage adjustments from quarterly to monthly and the frequent exchange rate devaluations also fuelled inflation.<sup>20</sup> In December real wages were 27 percent above their level in October, while the official exchange rate depreciated by 260 percent in the period October-December.

After October, however, the improvement in the fundamentals did exert downward pressure on inflation, which decelerated sharply from 54.8 percent to 17.7 percent in December. At the same time, the premium of the parallel market over the official exchange rate was substantially reduced by the end of 1989, an indication of a significant improvement in the monetary disequilibria. Three main factors explain this reduction of the premium: the devaluation of the official exchange rate; the slowdown in the rate of growth of the money supply, linked to the improvement in the budget deficit; and the reduction in the monetary overhang as a result of the large cumulative increase in prices during 1989.

As to currency substitution, the shift from domestic to foreign currency deposits was halted in the second half of the year, and the share of foreign currency deposits in broad money declined from 71 percent in June to 69 percent at the end of December.

The tightening of bank credit to enterprises was partially compensated for by the flourishing of a thick inter-firm credit market, which partly cushioned the enterprise sector from the squeeze in official credit. Inter-firm credit declined by only 9 percent in real terms during 1989, compared

---

<sup>20</sup> The government did not anticipate this effect, and it tried to reduce the wage-price spiral by lowering the coefficient of indexation and forbidding wage increases in excess of the indexation rules. With accelerating inflation, however, the shortened interval of adjustment had a negative impact that dominated the moderating effects of the reduced coefficients of indexation.

with a decline of 65 percent in real terms in bank credit to the non-government sector. The result was a dramatic increase in the size of inter-firm credit relative to official credit, from 63 percent at the end of 1988 to 145 percent at the end of 1989.

To sum up, the deterioration in the macroeconomic situation was most severe in the first half of 1989. The rapid increase in the rate of inflation to almost hyperinflationary levels in the second half of 1989 was the result of a combination of factors, the foremost being: the liberalization of food prices; large adjustments in administered prices, particularly energy; continuous devaluations of the exchange rate; and the formalization of a backward wage indexation scheme with progressively shorter periodicity for adjustments. Accordingly, wage indexation and the exchange rate policy turned the "corrective" increases in the price level associated with the reduction in the subsidies for food and energy prices (August and October) into sustained higher inflation. Moreover, anticipation of the January 1990 program is likely to have affected developments at the end of 1989 and to have exerted further pressure on inflation. Significant purchases and hoarding by households were detected, along with the accumulation of inventories by enterprises. Finally, the wage spike in December 1989 reflects the anticipation of the price corrections carried out in January 1990, since, through a complicated indexation rule, the December increase was linked to both price changes in November and expected changes in January.

#### The Stabilization Program of January 1990

The stabilization program, launched on January 1, can be defined as heterodox, with two nominal anchors, the nominal wage and the exchange rate, and fiscal and monetary tightening. The wage policy consisted of a lagged indexation of the wage bill with low coefficients.<sup>21</sup>

The wage ceilings were to be enforced through a steeply progressive tax penalty. The exchange rate was frozen at 9,500 zlotys per US dollar, after the unification of the parallel and official markets, and the decreed "internal" convertibility of the zloty (for current account operations but not for capital account operations). The freeze of the exchange rate was preceded by a sharp depreciation of 46 percent, and the measure resulted in a significant overshooting of the parallel market rate prevailing on average in December (about 30 percent).<sup>22</sup> It was expected that the exchange rate would be defended by a special fund (of US\$1 billion) to be made available by foreign banks, as well as by the interest rate policy.

The fiscal components relied on a balanced budget, to be achieved in 1990. An increase in revenues of about 4 percent of GDP and a small reduction

---

<sup>21</sup> The wage bill was indexed to the changes in prices in the preceding month according to the following coefficients: 0.3 in January, 0.2 in February-April (a coefficient that was ultimately maintained through June), 1 in July and 0.6 thereafter. This decision was taken to compensate for the effects on real wages of the administered increase of energy prices in July. The rationale is not fully clear, however, because by July enterprises had accumulated significant room to increase their wage ceilings, as in the first six months they had stayed well below the ceilings imposed.

<sup>22</sup> The parallel market was very volatile in December: while the reduction in the overhang and the previous real exchange rate depreciations pushed the parallel rate down to the level of the official rate in mid-December, in the last days of the month the rate approached 9,500 zlotys in anticipation of the decision actually made on January 1, 1990.

in expenditures of around 1 percent of GDP were to produce an adjustment in the budget. The government undertook discretionary measures--which were to have supplemented the automatic increase in real revenues from the expected reversed Olivera-Tanzi effect--to increase revenues: it raised the basic rate of the turnover tax from 15 percent to 20 percent; it revalued tenfold the fixed assets of the socialized enterprises, the basis for the dividend tax; and it drastically curtailed tax exemptions and relief. On the expenditure side, the main gains were expected to come from a reduction in the subsidies on the order of 8 percent of GDP.

The monetary components relied on tight credit conditions in the first quarter of 1990 that were partly loosened in the following three quarters of the year. Net domestic assets were expected to grow by about 20 percent in nominal terms in the first quarter, a level that implies a real decline of 30 percent, and to grow at an average quarterly rate of 7-8 percent in the rest of the year, a level that is above the expected rate of inflation. This policy would have guaranteed a small real increase in net domestic assets by the end of the year. The credit ceilings were complemented by an interest rate policy geared to maintain positive real rates throughout the year. Given expected inflation of about 30-35 percent, the government set the refinancing rate of the National Bank of Poland, which was to serve as a sort of leading rate, at 36 percent in January.

Amendments to the banking law strengthened the independence of the central bank. This measure likely signalled to actors in the economy that the central bank was abandoning its role as lender of last resort.

Fundamental liberalization measures accompanied the above macroeconomic policies. The price system was liberalized almost entirely--only 5 percent of goods sold at the retail level remain subject to price controls--and simultaneously the administered prices of energy products were raised more than 400 percent so as to reduce the subsidies. The trade system was liberalized by abolishing the quantity controls on imports and replacing them with tariffs and by reducing the quotas for exports of basic commodities.

Finally, the government announced a program of privatization and restructuring of the industrial sector, including new rules establishing triggers for the initiation of bankruptcy and restructuring of enterprises. In this regard, failure to pay the dividend tax (a tax on the value of the funding capital of a firm) was established as the main instrument for triggering these procedures.

To summarize, the design of the program was based on the assumption that the nominal anchors would help reduce inflation very fast, and, accordingly, monetary balances and credit, after an initial tight condition meant to defend the nominal anchors, were expected to grow considerably in real terms starting in the second quarter of 1990. The planned decline in real terms in the first quarter was based on the assumption that the growth of nominal credit and monetary aggregates would lag behind the rate of inflation, pushed up temporarily by the increase in energy prices. However, it was thought that the decline in real wages would give room to enterprises to absorb the price shock (see also Lipton and Sachs 1990). That the program was not intended to squeeze aggregate demand can be inferred from the expectation of a current account deficit of more than 7 percent of GDP in 1990 (compared with a deficit of 2.6 percent of GDP in 1989).

### Initial Results

The initial results of the stabilization program can be characterized as stagflationary, at least in the first two months following the start of the stabilization measures. A sharp drop in output was accompanied by an

acceleration in the rate of inflation, which remained persistent and relatively high given the depressed economy. Using a terminology suggested by Polish economists (Kolodko and McMahon 1987), the economy experienced a shift from a condition of shortage-flation--given by the combination of high inflation and large shortages of goods--to one of stagflation.

The rate of inflation, after jumping to 78.6 percent in January 1990, declined to 23.9 percent in February and to an average monthly rate of 5 percent in March-June. After falling to 1.8 percent in August, it bounced back to 4.7 percent in September and 5.7 percent in October, 4.9 in November and 5.9 in December pushed by the large increases in the prices of oil products and administered prices. Notwithstanding the external negative shock and successive increases in administered prices, the persistently high rate of inflation, which oscillated around 4 percent per month for more than 10 months, was unexpected. Given the larger than anticipated fiscal adjustment and drop in output, this persistence was puzzling, although it is similar in some ways to Brazil and Argentina's experience with stabilization programs. When fiscal and monetary explanations for this phenomenon are ruled out, the main factors can be identified as: (1) the slow movement toward a higher equilibrium price level for both tradable and non-tradable goods; and (2) the de facto high degree of indexation of wages to prices since March 1990.

The profile of the decline in output shows that the drop was concentrated at the beginning of the program and that thereafter output remained practically flat, with some signs of a possible recovery surfacing in August-September. Along with the decline in output sold, initially enterprises drew down significant quantities of inventories of both inputs and finished products. Employment in the socialized sector responded with a lag to the drop in output, and in the year as a whole employment was about 10 percent below its level in the same period in 1989. Unemployment, practically non-existent before 1990, increased after February 1990 at an average of 100,000 people per month, reaching about 1.15 million people in December (more than 6 percent of the labor force). "Statistical" real wages declined sharply in the first six months of 1990, while they increased significantly in the third quarter (about 20 percent over the second quarter) and fourth quarter. Despite this increase, in the year as a whole, they declined by about 30 percent.

Marked improvements took place in both the fiscal and the external accounts. The fiscal accounts moved into a sizable surplus in the first half of 1990 (about 3 percent of GDP was expected for the whole year), despite the acceleration in inflation in the first quarter and the decline in output. The improvement continued in the third quarter, although a deficit was experienced in the last quarter of 1990. The main factor behind this unexpected surplus was a surge in tax revenues, mainly on enterprise profits, which at the end of 1989 (which is the tax base for 1990 payments) were much larger than anticipated as a result of large capital gains on enterprise dollar deposits. The trade balance displayed a remarkable improvement, with a surplus of US\$2.7 billion (for convertible currency trade) in the year as a whole, with exports in convertible currencies increasing by more than 40 percent and imports increasing by 10 percent. The change in gross reserves fully reflected the improvement in the current account.

On the monetary side, net domestic assets grew well below the ceilings of the program in the first half of the year, while the growth of the stock of money was in line with nominal targets because of the monetization of foreign reserves (table 1-3).

This trend was reversed in the second half of the year, however, and the Net domestic assets of the banking sector (NDA) overshot the credit ceilings of the program. While the contemporaneous increase in real wages and real

**Table 1-3. Poland: Monetary Survey, December 1989-September 1990**  
(trillion zlotys, end of the period)

	1989.IV	1990.I	1990.II	1990.III	1990.IV
Gross reserves	24.1	26.8	36.7	50.4	46.8
Domestic credit	40.0	50.8	63.4	81.8	110.4
Credit to government (net)	6.5	2.7	-11.1	-18.1	-8.2
Credit to non-gov't	33.5	48.1	74.5	99.9	118.6
Other	31.8	35.3	36.5	35.0	34.8
Broad money	96.0	112.9	136.6	169.2	192.0
Inter-firm credit	47.3	75.1	82.6	77.3	82.6 <sup>a</sup>

a. November.

Source: National Bank of Poland.

credit raises concerns about possible excess liquidity in the system, the evidence for the third quarter, particularly the continued increase in foreign reserves, points to a "remonetization" of the economy.<sup>23</sup> It is worth noting that part of the increase in bank credit appears to have resulted from the substitution of inter-firm credit with bank credit, a positive phenomenon. Developments in the fourth quarter were more worrisome, however, as the financing needs of the government sector increased with the shift to a budget deficit. The real decline in the stocks of money and credit has been substantial.

In the first quarter, net domestic assets and broad money declined by 54 percent and 44 percent in real terms, respectively. In the second quarter net domestic assets continued to decline in real terms, while broad money increased in real terms because of the large inflows of international reserves.

The National Bank refinancing rate was set according to expected inflation, the aim being to produce slightly positive real rates. In January, the refinancing rate was 36 percent, in February 20 percent, in March 10 percent, in April 8 percent, in May 5.5 percent and in June 4 percent. After declining to 2.5 percent in July-September, it was raised to 3.5 percent in October and again to 4.5 percent in November, following the increase in the rate of inflation. Ex post, the rates were negative in real terms in January-February and roughly in line with inflation in the following months.

The magnitude of the initial results was largely unexpected; the discrepancy is so large that the normal bias, which often seems to

<sup>23</sup> Moreover, almost half the increase in credit to non-government was channelled to the non-socialized sector: households, farmers and private firms.

characterize predictions about stabilization programs, whereby inflation tends to be underestimated and growth overestimated, cannot explain it.<sup>24</sup>

Before turning to possible interpretations of the initial results, it is important to emphasize that there were no slippages in the implementation of the program during the first semester. More controversial is the issue of slippages in the second half in the areas of both credit and wage policies. However, given that in both areas developments in the first semester were well below the targets of the program, it is not too surprising that some overshooting took place in the second semester.

Obviously, the real issue is whether these trends are sustainable in future months and consistent with a decline in inflation. In the first semester the two nominal anchors of the program, the exchange rate and the nominal wage, were maintained without trouble and actually appeared to be non-binding as the increase in wages stood below the ceilings and the exchange rate stabilization fund made available by western countries was not used, with a build-up of international reserves. As to the monetary program, the ceilings (on both net credit to the government and net domestic assets) were respected with ample margins, and interest rates were set as programmed. Although some overshooting of the targets took place in the third quarter, even then no pressure was exerted on the exchange rate, and the wage increases were consistent with the original indexation scheme, given that the increases derived from use of the "reserve" accumulated in the first quarter, when wages rose well below the norm.

Assessment of the most recent trends and the policy prescriptions for the next months depend crucially on the analysis of the results of the program so far, in particular of the unexpected outcomes, such as the sharp recession, the fiscal improvement and the sizable current account surplus. One possible, and actually widespread, reading of the initial results of the program interprets the recession as a standard Keynesian demand contraction phenomenon. For Poland, the appearance of demand barriers would certainly represent a fundamental break with the past, when the economy was traditionally supply constrained. The large drop in real wages would thus be the main source of the contraction in output, and the larger than expected decline in output would seem consistent with the larger than expected fall in real wages.

Without denying the possibility that this drop in demand could have been the source of the drop in output, several doubts can be raised. First, it is widely recognized that in 1989, at least in the first three quarters, the economy experienced excess demand, with worsening shortages. Therefore, when real wages are measured using official price indices, they reflect--in the terminology of Polish economists--"statistical" rather than actual real wages (see also Lipton and Sachs 1990). These "statistical" real wages largely overestimate real purchasing power in 1989 and thus overestimate the drop in real purchasing power in 1990, as measured by the decline in the "statistical" real wages.

Second, measured retail prices likely overestimate the actual rates of inflation, as a significant proportion of retail trade in 1990 took place outside the state distribution channels, at prices estimated to be 20-30 percent below officially recorded prices.

Third, the downturn in production actually began in 1989, specifically, in the second half, when "statistical" real wages were still well above their 1988 levels.

---

<sup>24</sup> van Wijnbergen (1982) has emphasized the presence of a consistent bias of this type in IMF-supported stabilization programs.

Fourth, although a decline in domestic demand was clearly envisioned in the program, an increase in foreign demand should have sustained output.

Finally, the behavior of the financial savings of households appears at odds with the view of a household sector experiencing severely constrained liquidity forced to adjust its demand for goods downward. In particular, the availability of a large stock of foreign currency deposits made by the household sector--which is an abstraction from distributional issues, which may be important--means that households were not constrained in borrowing at the outset of the program for the most part. Given the temporary character of the income policy scheme, it remains to be explained why households did not deplete their stock of foreign currency deposits to protect their levels of consumption. Indeed, in US dollar terms, household deposits in foreign currency increased in the first six months following the start of the program (table 1-4).

Table 1-4. Poland: Foreign Currency Deposits  
(billions of US\$)

	1988	1989				1990		
	IV	I	II	III	IV	I	II	III
Total	5.4	5.8	6.8	7.2	7.2	6.0	5.9	6.2
Households	4.3	4.5	4.5	4.8	4.9	5.0	5.2	5.6
Enterprises	1.1	1.3	2.3	2.4	2.3	1.0	0.7	0.6

Source: National Bank of Poland.

More generally, a main limitation of the above view is that it takes as exogenous elements that are actually endogenous, particularly the decline in real wages, which is assumed to be the ultimate source of the decline in output.<sup>25</sup>

An alternative explanation that is favored here emphasizes that the focus of the stagflationary effects of the program should be on the enterprise sector and its reaction to the large supply shock arising from the elimination of the subsidies for both input prices and interest rates. According to this view, the credit crunch associated with both the policy-determined tightening of official credit and the sudden increase in credit risk played the main role in transmitting the effects of the initial supply shock.

<sup>25</sup> The policy implications of this demand-led view of the recession are straightforward: they imply some form of demand stimulus. However, the stimulus can be achieved with different policies and different degrees of policy activism. A "non-activist" possibility would be not to change the policies and to let the decline in inflation, induced by the contraction in demand, reconstitute real monetary balances, and hence demand and output. A more activist approach would favor either increasing demand through a looser wage policy or more expansionary fiscal policy or turning monetary policy around with a much more accommodative credit policy (similarly to the recent experience in China in 1990).

While it has generally been observed that the jump in the rate of inflation can reflect the effects of the price liberalization in the context of the liquidity overhang, the larger than expected increase in the rate of inflation in January can be mainly ascribed to cost-push factors linked to the devaluation of the exchange rate and to the lifting of the subsidies decreed at the outset of the program as a main element in the rationalization of the price system. While the importance of these targets to achieving greater efficiency in the economy and to reducing pressures on the budget is not questioned here, it is important to stress that the recessionary impact of a tightening of credit when there is a large increase in the prices of inputs has been overlooked. In Calvo and Coricelli (1990), it is estimated, although with an admittedly rough calculation, that the credit crunch, measured as the gap between actual and required liquidity, necessary to permit enterprises to maintain the same level of production of 1989 was on the order of 60 percent at the beginning of 1990. To appreciate the magnitude of the crunch, note that in January 1990 working capital credit from the banking system to the socialized sector declined in nominal terms--in a context of increased prices for domestic inputs of 400 percent and of large increases in the prices of foreign inputs as a result of the devaluation at the outset of the program, and of a jump in interest rate costs.

Although the squeeze somehow loosened in the following months, by the end of June 1990 the stock of credit to the non-government sector was 20 percent below its level in real terms at the end of 1989. This partial loosening of the credit squeeze seems consistent with the fact that, after dropping sharply in January, industrial output remained flat in the following months. A similar argument applies to the third quarter, which shows some recovery in economic activity. At the end of the third quarter, real credit to the non-government sector had essentially recovered its level of December 1989. In the fourth quarter credit to the socialized sector declined in real terms while production remained flat.

In a static framework, the sharp reduction in subsidies for enterprises represents a supply shock that even in a competitive industry would cause a reduction in output and an increase in prices. This simple story seems to accord with several phenomena characterizing the first results of the stabilization program. However, it would imply a simple shift from a distorted equilibrium to an undistorted and efficient equilibrium. At the micro level, this explanation suggests that firms operating only thanks to subsidies should have gone bankrupt after the elimination of these subsidies, while efficient firms should have survived after the Big Bang. However, the first months following the stabilization display a different picture that indicates a widespread recession without significant bankruptcies. This phenomenon casts doubt on the working of a Schumpeterian, efficient natural selection.

The explanation postulated here, without denying the relevance of the above static factors, relies on a different mechanism. Specifically, it emphasizes the role of the credit markets in transmitting the effects of the supply shock. The sharp reduction in the stock of real credit from both the banking system and within the enterprise sector itself accounts for the observed recession.<sup>26</sup> By increasing the price of inputs, the stock of liquidity necessary at the beginning of the period to operate at the old level of production increased sharply. The lack of a sufficient stock of liquidity likely induced firms to reduce their purchases of inputs, with a consequent fall in output. This phenomenon, which is related to the adequacy of the initial stock of liquidity, occurs independently of the behavior of the price of outputs. The increase in prices, accompanied by the compression in real

---

<sup>26</sup> Calvo and Coricelli (1990) provide a simple analytical model that illustrates this phenomenon.

wages, helped firms reconstitute their liquidity. Accordingly, both the fall in real wages and the good profit performance of Polish industry during the first months of the deep recession can be explained. The good profit performance of enterprises in particular is puzzling for those who share the view that a recession is induced by "demand barriers."

The actual working of the credit crunch and the relative role of the quantity of credit versus its cost (interest rate) are still uncertain, given the presence of direct controls over bank credit.

In this connection, the behavior of the inter-firm credit market may provide important clues. As noted, in 1989 the stock of inter-firm credit, despite a slight decline in real terms, grew much faster than official bank credit did. According to data up to March 1990, although smaller than the decline in official credit, the stock of inter-firm credit declined by about 33 percent in real terms in the first quarter of 1990 (compared with a decline in bank credit of 46 percent in real terms in the same period). It continued to decline in real terms in the second quarter and also in relation to bank credit. Starting in July it even declined in nominal terms. In the remaining months of 1990 it therefore, the inter-firm market did not provide a relevant cushion to the squeeze of official credit. Moreover, it is conjectured here that a large component of inter-firm credit in 1990 represents an accumulation of arrears rather than a "voluntary" extension of new credit. This phenomenon is consistent with the view of a sudden increase in credit risk, likely associated with the signaled withdrawal of the central bank from its role as lender of last resort.<sup>27</sup>

The extremely simplified mechanism just described has to be amended to accommodate the impressive improvement in the trade balance observed after January 1990. Indeed, in general recessions led by temporary supply shocks should result in a worsening of the trade balance (consumption tends to decline less than output).<sup>28</sup> However, if the behavior of inventories held by enterprises is considered as well, the "model" used here can account for a temporary improvement in the trade balance. The liquidity crunch will induce enterprises to deplete their stock of inventories to reconstitute their liquid balances--in other words, there will be a shift in the "portfolio" of enterprises from inventories to money. As a result, total absorption in the economy by households and enterprises can decline more than output--although the decline in consumption falls short of the decline in output--and thereby yields an improvement in the trade balance. The data on inventories are, however, ambiguous, as inventory accounting is unclear. According to the authors' calculations, the stock of inventories declined sharply at the beginning of 1990 and at the end of September was still well below its level in 1989.

Demand-side factors certainly played a role. Household savings increased during the year so that no consumption "smoothing" took place. This increase occurred as households likely tried to reconstitute their real stock of financial wealth, eroded by high inflation (see Frydman and Wellisz 1990). In addition, the increase in unemployment could have induced an increase in precautionary savings. Finally, a further element (mentioned in the main

---

<sup>27</sup> In addition, the central bank strengthened its supervision of the criteria that commercial banks follow in extending credit. It appears that an assessment of creditworthiness is a condition for the extension of credit.

<sup>28</sup> The fall in supply reduces the permanent income of workers-households, which accordingly reduce their consumption. Therefore, the fall in real wages and in consumption is a response to the credit crunch and the attendant fall in supplies, and not an exogenous source of the recession.

text) might have been the shift in the distribution of income in favor of profits.

STABILIZATION IN YUGOSLAVIABackground

The reversal of external financing flows during the 1980s forced Yugoslavia to undertake drastic measures to balance its external accounts. The external adjustment consisted primarily of large real exchange rate devaluations and, initially, quantitative restrictions on imports. Although these measures were able to generate increasing current account surpluses, economic activity stagnated and inflation accelerated almost continuously (figure 2.1). Moreover, the absence of fiscal imbalances in the economy might suggest that the nature of inflation in Yugoslavia is entirely non fiscal.

While it is true that many hyperinflation episodes are triggered by balance of payments difficulties and large exchange rate devaluations, the complete absence of fiscal imbalances from the overall picture in the case of Yugoslavia is intriguing. Indeed, even the "balance of payments view of inflation" recognizes the role of fiscal deficits in the determination of inflation, although such role is assumed to be less central than under the "fiscal view of inflation". In the former, the exchange rate assumes the central role, while fiscal deficits contribute to inflation mostly through endogenous interactions with the exchange rate and the inflation rate itself (see for instance, Dornbusch 1987; Dornbusch and Fischer 1986; Liviatan and Piterman 1986; and Montiel 1989).

This appendix will show that, while non-fiscal factors played a role in the acceleration of inflation during the 1980s, especially at the end of the decade, the existence of fundamental domestic imbalances also contributed decisively to the inflationary process. These fundamental imbalances were originally located in large segments of the enterprise sector, but gradually spilled over to the financial system, resulting, among other things, in a quasi-fiscal deficit in the central bank<sup>29</sup>.

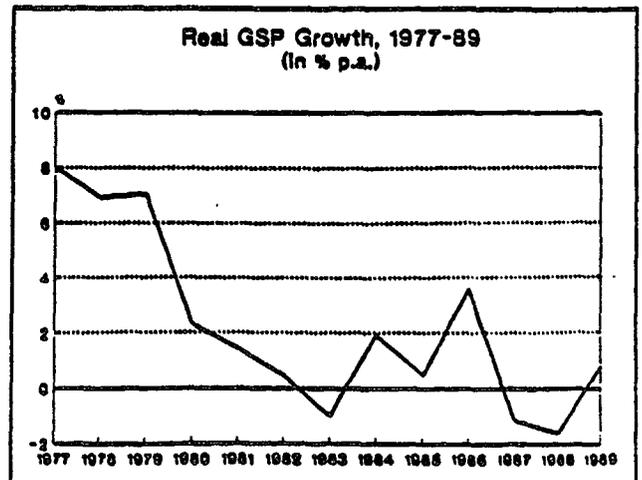
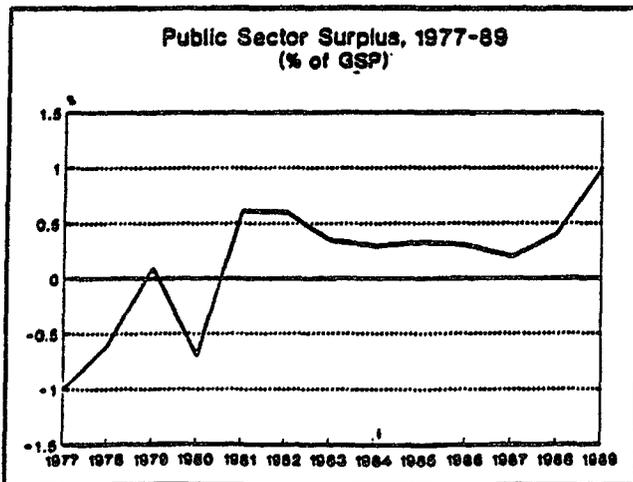
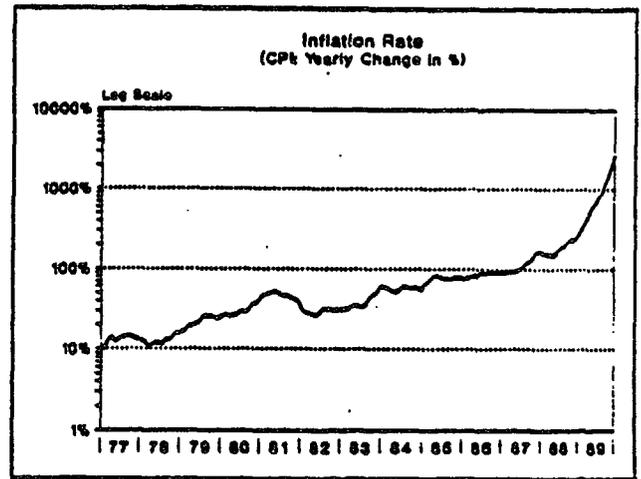
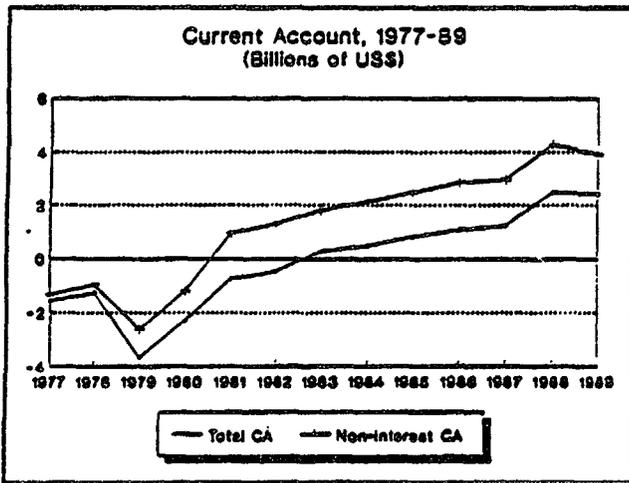
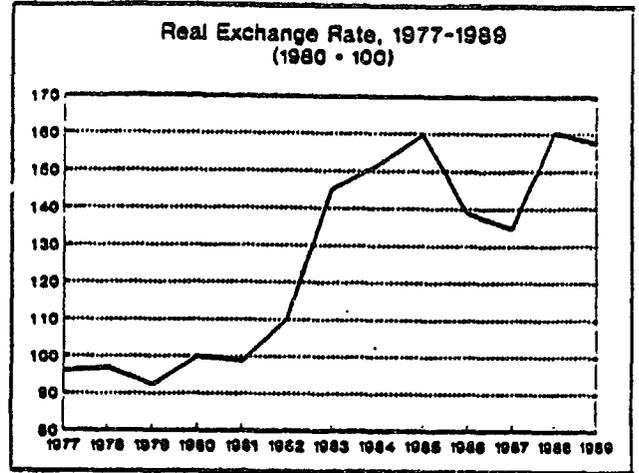
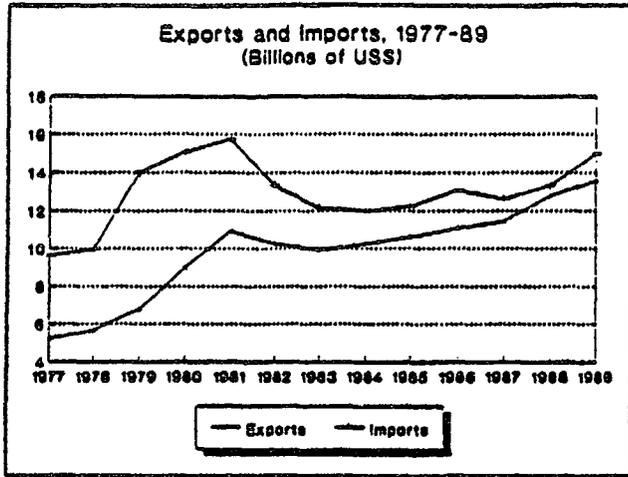
A major non-fiscal factor that contributed to higher inflation was the need to reduce real wages and ensure a given real devaluation of the exchange rate--the Pazos-Simonsen mechanism (see Dornbusch 1987; Dornbusch and Simonsen 1988; Pazos 1978; and Simonsen 1989). This mechanism became more important after the introduction of wage indexation in 1987. In particular, the large real devaluation of mid-1988 (figure 2.2) in the context of wage indexation and monetary accommodation triggered a significant increase in the rate of inflation. (figure 2.3). During the last three quarters of 1989, the relation between real wages and inflation changed. During this period, wage demands were driven by expectations of a future wage freeze, leading to a 40 percent increase in real wages and a dramatic acceleration of inflation as shown in figures 2.2 and 2.3 (see Helpman and Leiderman 1990, for a model of inflation based on real wage increases).

---

<sup>29</sup> More detailed analysis of inflation in Yugoslavia are provided in Rocha (1991), Bole and Gaspari (1990), Gaspari (1988), Mates (1987), and Mencinger (1987).

Figure 2.1

Selected Macroeconomic Variables For Yugoslavia, 1977-89



As to the fundamentals, the imbalances in the Yugoslav economy originated, as noted, in large segments of the enterprise sector. Already in the late 1970s a significant number of enterprises were recording losses. During the 1980s the amount of the losses increased significantly (table 2-1). Although these numbers are affected by many accounting problems, they indicate a deteriorating trend that is highly probable. One likely cause for this increase in losses was the sharp real devaluations undertaken in the mid-1980s (enterprises initially held 80 percent of Yugoslavia's external debt). Another likely cause was the growing numbers of redundant workers in the enterprises, estimated to have reached 20 percent of the labor force in 1988.<sup>30</sup>

An obvious question is how the enterprise losses were financed. During the 1980s there were two basic sources of financing. The first comprised various forms of inter-enterprise financing, including voluntary transfers from profit-makers to loss-makers inside the same industrial holding, as well as inter-enterprise credits and arrears. The second consisted of bank credits on subsidized terms. The banks, which were controlled by the enterprises, were able to continue this policy of credit subsidies until almost the end of the decade only by paying even more negative real interest rates on domestic deposits.

During the 1980s enterprises' financial imbalances spilled over into the central bank. Several enterprises revealed themselves unable to service their foreign liabilities. The central bank absorbed the foreign liabilities of enterprises located in less developed regions, thus adding to its own foreign liabilities. The central bank also absorbed the stock of foreign exchange (FX) deposits in the commercial banks, a measure designed to protect the banks from foreign exchange losses<sup>31</sup>. The reluctance of the central bank to charge positive real interest rates on its credits, while facing mounting payments on its foreign liabilities resulted in a quasi-fiscal deficit that constituted an independent source of monetary expansion.

Ultimately, inflation in Yugoslavia engineered a complex distribution of real resources, from holders of domestic assets and towards the financing of hidden losses in the system. This process of redistribution gained momentum in the 1980s, as a result of the reversal of financing flows and the successive exchange rate shocks in the economy. Indeed, the phenomenon of accelerating inflation in Yugoslavia can also be interpreted as resulting from an external-internal transfer problem, like the case of other debtor countries (see Cohen 1988). The ultimate beneficiaries of such internal redistribution were the enterprises, which were the major recipients of Dinar credits at subsidized terms, and the holders of foreign exchange deposits.

---

<sup>30</sup> See Mencinger (1989). That should be compared with an open unemployment figure of 14 percent.

<sup>31</sup> The stock of FX deposits (mostly held by residents) is not part of Yugoslavia's external debt. In the early 1980s, the stocks of external debt and FX deposits amounted to US\$ 20 billion and 11 billion, respectively.

Figure 2.2

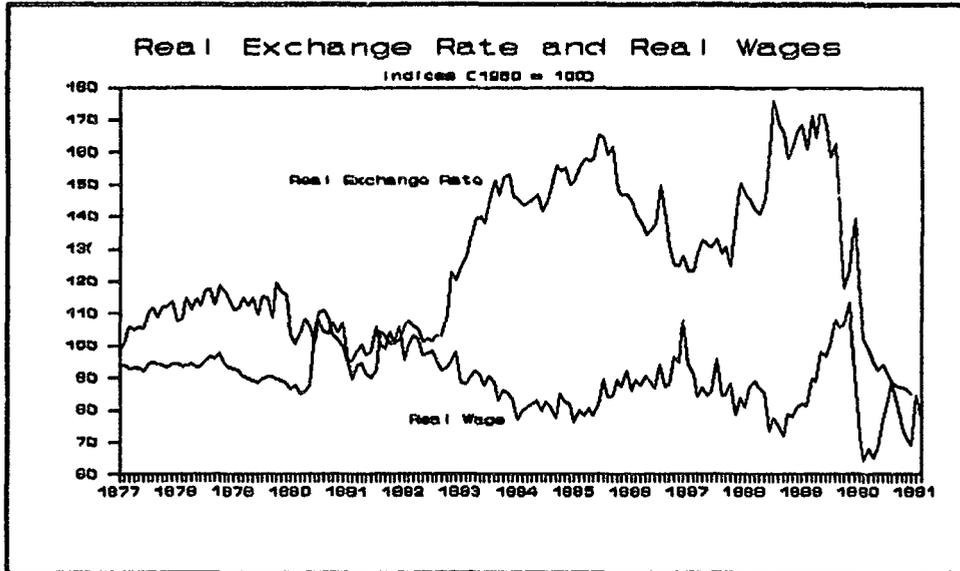


Figure 2.3

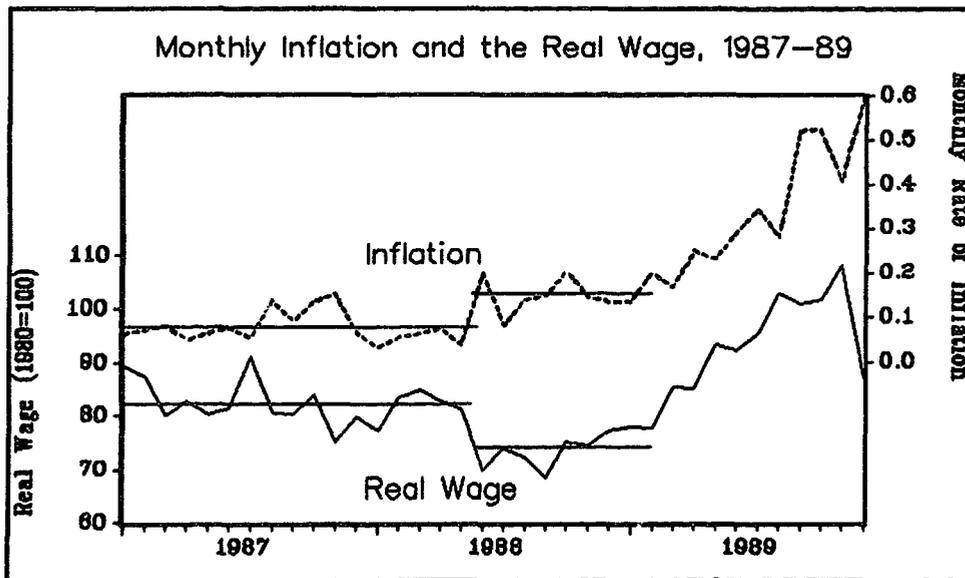


Table 2.1  
Enterprise Losses  
(in % of GSP)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Enterprise Losses:	1.6	1.3	2.2	2.9	2.1	2.8	3.0	6.6	5.7	15.0
Seignorage on Base Money:	1.8	2.7	2.7	1.6	3.9	3.6	4.2	4.9	5.7	12.0

Sources: SDK, NBY, Knight (1984) and Rocha (1989 and 1990)

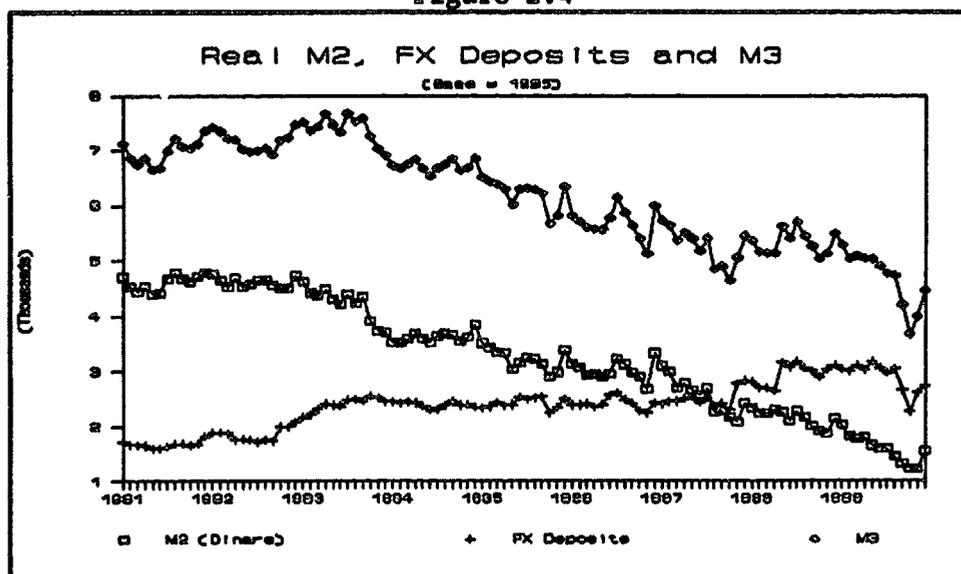
The precise magnitude of the inflationary financing of hidden losses is difficult to assess. On the one hand, not all the seignorage revenues on base money (changes in base money as shares of GSP) shown in table 1 were channelled towards the financing of hidden losses. For instance, in 1988 and 1989 roughly half of seignorage revenues on base money were absorbed by the large build-up of foreign reserves that preceded the stabilization program. On the other hand, the base of inflationary taxation was broader than base money, since it included the whole Dinar deposit base. The introduction of indexation on time deposits above three months in mid-1988 reduced the base of inflationary taxation. However, the implicit taxation of shorter-term deposits remained substantial<sup>32</sup>.

The combination of accelerating inflation and negative real interest rates on deposits resulted in a drastic portfolio shift out of domestic assets, as illustrated in figure 2.4. The share of foreign exchange deposits in broad money increased from less than 30 percent at the start of the decade to more than 65 percent in 1989. It is quite possible that the existence of FX deposits facilitated the shift out of domestic money, thus also contributing to inflation by accelerating the increase in velocity.

The failure to correct the internal imbalances was a major cause of the failure of the several stabilization attempts of the mid-1980s, which relied mostly on wage-price controls. Particularly noteworthy was the stabilization program of mid-1988, which attempted to curb inflation essentially through the establishment of progressively declining targets on the growth of money and wages, and the indexation of time deposits. This measure was introduced as an attempt to reduce the subsidization of credits and to impose financial discipline on enterprises. No fiscal support to stabilization was envisaged in the 1988 program.

<sup>32</sup> Therefore, the impressive correlation between enterprise losses and seignorage in table 2.1 is somewhat misleading, since the central bank did not finance enterprises directly. The inflationary financing of all hidden losses is more complex, involving the financing of central bank losses from base money creation and the financing of enterprise losses through subsidized bank credits. See Rocha (1991).

Figure 2.4



The inconsistencies of the mid-1988 program were aggravated by a real devaluation whose rationale was unclear, since the country was already running a large current account surplus and was also engaged in debt rescheduling negotiations with private foreign banks. In fact, the real devaluation defeated one of the main purposes of the external debt rescheduling, which was to relieve the pressure of external debt payments on the domestic economy.

The attempt to maintain the real exchange rate depreciated in the context of formal wage indexation resulted in a strong acceleration of wages and prices, as noted above. The real devaluation also increased the burden of foreign interest payments, thus offsetting in part the benefits of the rescheduling of commercial debt. The pressure to finance hidden losses, particularly the central bank's own deficit, led policy-makers to abandon the monetary targets soon after their implementation. Faced with higher real interest rates on bank credits several enterprises simply stopped paying, aggravating considerably the already severe problem of non-performing loans in the commercial banks.

#### Developments in 1989 and Preparations for the 1990 Program.

The failure of the 1988 stabilization program showed the futility of implementing another program without addressing the fundamental domestic imbalances. Thus, during 1989, consensus was reached about the need to generate a surplus in the non-financial public sector in order to cover losses elsewhere in the economy, even though there was less certainty about the required magnitude of the fiscal adjustment, as well as the best strategy for dealing with the loss-makers.

In the case of the central bank's own deficit, the solution was clear, consisting basically of the transfer of the servicing of its foreign exchange liabilities and agriculture subsidies to the federal budget. In the case of enterprises and commercial banks, the situation was less clear. Although enterprise losses were regularly calculated, frequent changes in accounting

rules and a lack of harmonization in accounting procedures decreased the reliance on available figures. The situation of commercial banks was not fully transparent either. While the share of non-performing loans was known to be large, but the available estimates were still tentative.

More important, the design of a well-defined strategy to deal with the loss-makers had not been completed. For instance, there were still doubts of whether to provide a fiscal subsidy to loss-makers, while submitting them to restructuring programs (involving lay-offs, debt write-offs, selective improving investments, changes in management, etc.), or whether to let the Darwinian-Schumpeterian law of natural selection operate freely. In this case, the number of bankruptcies was expected to increase much more rapidly, and the fiscal resources would be directed towards social programs, as opposed to the loss-making enterprises themselves. Finally, although privatization was already accepted as an essential component of the overall strategy, the mechanisms and timing of its introduction, as well as its interactions with the restructuring program, had not been fully worked out.

During 1989, progress in the establishment of the preconditions for a stabilization program was more advanced in the macroeconomic area. First, the debt rescheduling agreements of mid-1988 and the large current account surplus achieved in 1989 (US\$ 2.4 billion) resulted in an increase in international reserves from US\$ 3.3 to US\$ 6.1 billion. An adequate level of reserves was deemed essential to ensure the initial credibility in the program, which was to include the introduction of currency convertibility<sup>33</sup> and a substantial degree of import liberalization. In the fiscal area, all the changes in legislation required for the transfer of the fiscal operations of the central bank to the federal budget and the introduction of a new sales tax were completed.

The dramatic acceleration of inflation in 1989 (figure 2.3) affected the elaboration of a stabilization program that same year. As noted above, several causes contributed to such acceleration. First, the attempt to maintain the real exchange rate depreciated in the presence of wage indexation required an acceleration of inflation to achieve a reduction of the real wage. Second, in the last three quarters of 1989 the real exchange rate target was partly abandoned, but the very strong increase in real wages kept the pressures on inflation. Finally, the hidden losses in the economy had not been eliminated and still constituted a permanent source of monetary expansion and inflation. In addition, during 1989 the pressures on money supply were compounded by the large build-up of foreign reserves by the central bank. The perception that inflation was running completely out of control motivated the launching of the plan at mid-December, despite of the awareness of some loose ends.

### The Stabilization Program of 1990

The stabilization program of 1990, as it was called, contained a variety of measures in the areas of income, fiscal, monetary and trade policy. The program also included a currency reform that eliminated four zeros off the old Yugoslav Dinar. The program can be classified as heterodox, even though it did not include the imposition of widespread price controls for goods and services as happened under other heterodox programs of the mid-eighties. In addition to elements commonly found in other heterodox programs, the Yugoslav one included a financial and industrial restructuring cum privatization component that was supposed to affect most of the Yugoslav economic system,

---

<sup>33</sup> The dollar value of the stock of domestic currency and sight deposits was \$3.7 billion in December 1989. Thus, the level of reserves would be sufficient to cover a large portfolio shift out of domestic assets.

although this component had not been fully worked out at the start of the program.

The incomes policy consisted of a six-month freeze on the exchange rate, on nominal wages and on the prices of a set of goods (mostly in the areas of energy and transportation) that accounted for 20 percent of the consumer price index. The prices of the other goods and services remained completely free. The exchange rate was frozen at 7 new Dinars per deutschemark (DM) right after a devaluation of 20 percent on December 18. The devaluations preceding the program were supposed to have corrected the overvaluation that had occurred in the second half of 1989, but they were rapidly eroded by the price increases that followed (figure 2-2)<sup>34</sup>. Moreover, there was no attempt to use a larger real devaluation to neutralize the impact of the introduction of currency convertibility and the reduction in import restrictions.

The government froze nominal wages in December at the November levels adjusted for a 20 percent increase. Although it was known that the freeze could cause a substantial erosion in real wages, they actually reached their highest level of the decade in the second half of 1989 (figure 2-2). Thus, it was felt that a larger initial correction of nominal wages was not needed before the freeze. The prices of energy, transportation and some other goods were frozen on December 18 after a series of adjustments in November and the first half of December. As with the exchange rate, the level of the price adjustments seems to have been based on an expectation of rapidly declining rates of inflation after the program.

The fiscal policy component of the program consisted basically in the assumption of several non-traditional expenditures by the budgets of the federation and the republics and the maintenance of a small budgetary surplus. The non-traditional expenditures included the servicing of foreign liabilities of the National Bank of Yugoslavia, interest subsidies to agriculture, transfers to the bank restructuring program, transfers to the social safety net, and coverage of some enterprise arrears.

The overall expansion of fiscal expenditures and maintenance of the budgetary surplus required an increase in tax revenues of approximately 5 percent of gross social product (GSP). The increase in revenues was expected to come partly from exogenous increases in taxation (3.5 percent of GSP) resulting from the introduction of a new federal sales tax, higher customs duties and unspecified increases in the republics' tax rates, and partly from endogenous increases in real tax revenues resulting from the stabilization itself (1.5 percent of GSP)--the inverse Olivera-Tanzi effect (Olivera 1967; and Tanzi 1977). Estimation of the Olivera-Tanzi effect was complicated by the constant changes in the tax rates in the 1980s, designed mostly to offset the inflationary erosion of real tax revenues. In addition, in 1989 a partial indexation mechanism was applied to the collection of the basic sales tax.<sup>35</sup>

Monetary policy consisted essentially of a freeze on the nominal stock of the central bank's net domestic assets, while also allowing the central bank to monetize the foreign exchange inflows resulting from the program. However, it should also be noted that there was a substantial real increase in the central bank's domestic credits and base money during December 1989 (figure

<sup>34</sup> However, the real effective exchange rate relative to December 1989 in figure 3 understates the real devaluation that occurred right before the freeze, since it is measured by the average exchange rates in December adjusted by the CPIs in Yugoslavia and abroad.

<sup>35</sup> These measures succeeded in maintaining the ratio of fiscal revenues to GSP at around 35 percent during the second half of the 1980s.

2.5). Thus, monetary policy was less restrictive at the very start of the program than might have seemed at a first examination.

Finally, the restructuring cum privatization component included various measures that were still being developed or were running into problems with implementation. For instance, although the program called for the financial restructuring of the commercial banks and the commitment of fiscal resources for this purpose, the agency that presumably was to lead the bank restructuring program was created only in mid-1990.

On the side of enterprise reform, it was finally decided that the program would not provide financing for loss-makers out of budgetary resources. It was expected that the program would therefore result in a large number of bankruptcies. To prevent enterprises from circumventing the lack of financing by lending to each other, the government introduced strict enforcement of the payments rules on January 1, 1990. The rules stated that enterprises which had not met their obligations within 60 days would be declared bankrupt and closed. Enforcement of this rule was possible because of a clearing system that centralized the payments among enterprises and banks.

Although the decision to force inefficient enterprises to bankruptcy was in principle worthy of praise, the strategy to deal with bankrupt enterprises and the accompanying institutional and legal framework was still incomplete. Regional institutions that would presumably be placed in charge of restructuring and privatization had not yet been created. In addition, although the program included the commitment of fiscal support to a social safety net, the amount of required resources seems to have been underestimated.

### First Results of the 1990 Program

Although it is too early to make a final judgment on the 1990 program, it is possible to assess the initial results and to identify the problems. As shown in table 2.2 and figure 2-5, the first point to be made is the program's success in halting inflation during the first semester without recourse to widespread price controls. The index measuring variations in the retail prices by calendar month (computed since December 1989) shows that the decline in inflation at the start of the program was actually more pronounced than the classical index suggests. However, table 2-2 also indicates a revival of inflationary pressures after July.

Industrial production fell by 10 percent in 1990, while GDP fell by 7.5 percent. However, these figures might overstate the recessionary impact of the program. As shown in figure 2-6, economic activity in the socialized sector, which was unusually strong in the first half of 1989, had already weakened considerably in the second half of that year. In addition, the stability of electricity production and the creation of large numbers of small private sector enterprises during 1990 may indicate that production in the private sector (not fully captured in the statistics) was not affected to the same degree.

Table 2.2

Monthly Variations of Retail Prices, Dec 1989-Feb 1991  
(In %)

	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
(A)	59	42	13	5	3	0	0	2	3	7	8	3	3	5	10
(B)	64	17	8	3	0	0	0	5	2	11	10	na	na	na	na

Notes: (A) Classical Index, computed from mid-month to mid-month.

(B) Supplementary Index, computed from beginning to end of month.

Source: Federal Institute of Statistics.

In spite of the decline in output, the increase in the real tax revenues of the federation was impressive (figure 2-6). As mentioned, the increase reflects both endogenous and exogenous factors. Total revenues rose less in real terms, however, a reflection in part of the difficulty of collecting taxes from an economy in recession and the absence of significant exogenous tax adjustments at the local level. Although the public sector overall generated a small surplus in the first nine months of 1990, a development that caused concern was the rapid growth of traditional expenditures by the federation, including the wages of federal employees, as they absorbed resources that should ideally have been channelled to the restructuring programs.

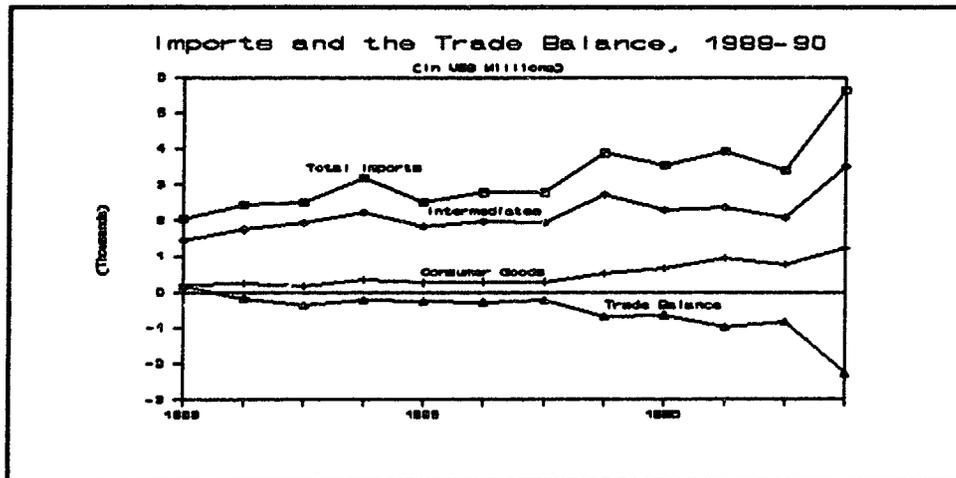
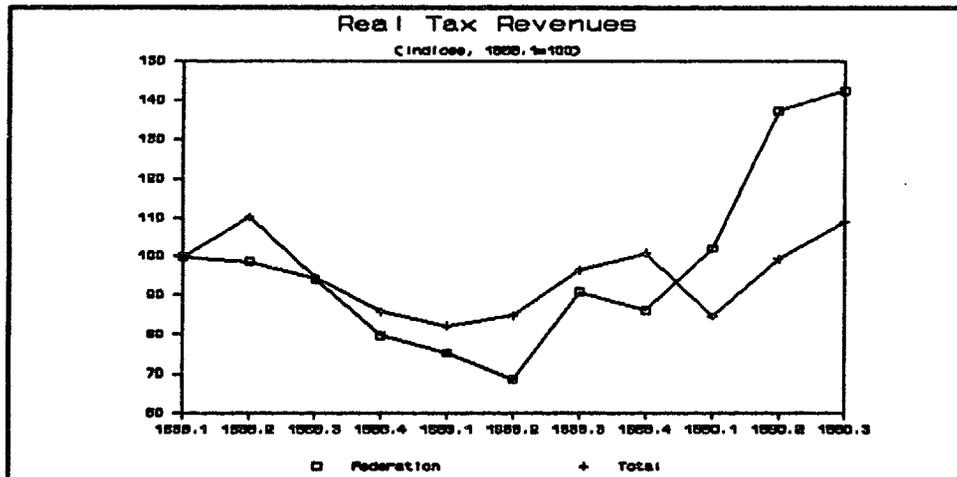
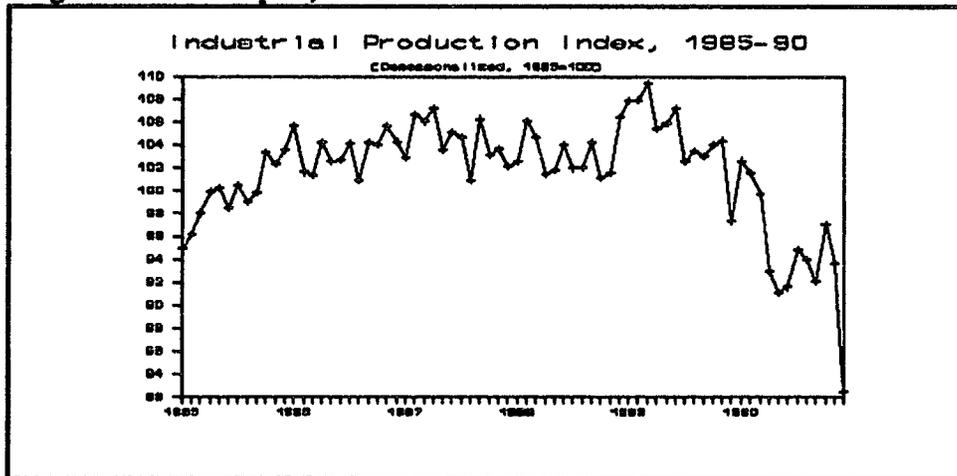
The accumulation of reserves was indeed substantial--US\$4 billion between December 1989 and September 1990--and the stock of reserves rose to more than US\$10 billion, or 60 percent of the gross external debt. On the side of the current account, the freezing of the exchange rate and the introduction of convertibility led to a rapid recovery in the level of workers' remittances starting in the last days of December. On the side of the capital account, the same factors, combined with the imposition of tight controls on domestic credit, led enterprises to repatriate foreign exchange assets previously held abroad.

These foreign exchange inflows were the fundamental source of the expansion in base money during the first months of the program (table 2-3). After the December "blip" (partly the result of increased inflows) and the January "crunch," base money expanded in keeping with the increase in National Bank of Yugoslavia's net foreign assets. The result was a real increase of 70 percent in the stock of base money between December 1989 and September 1990 (measured by calendar inflation).

The reshuffling of the portfolios of asset-holders at the start of the program is shown clearly in table 2-4. During the first three quarters, the increase in net foreign assets is accompanied by a rapid increase in M1 (driven especially by currency). The growth of Dinar time deposits was much



Figure 2.6. Output, Real Tax Revenues and the Trade Balance



slower, remaining actually below the rate of inflation. Finally, the stock of foreign exchange deposits was essentially stable. The fact that households did not convert their foreign exchange deposits into Dinar deposits could reflect an initial lack of confidence in the program. In the Israeli stabilization program, the conversion of dollar-linked deposits into domestic deposits constituted a basic source of non-inflationary monetary creation (Liviatan 1988).

Of course, the evaluation of portfolio shifts resulting from the program has also to consider the repatriation of foreign exchange assets held previously abroad by enterprises and the conversion of German Marks and Dollars held "under the mattress". The first was shown to be substantial (around US\$ 2 billion), while there is less information about the second.

There are no clear indications that monetary policy was unduly restrictive at the start of the program. Interest rates on time deposits were around 12-15 percent per year, an indication that liquidity conditions were not very tight.<sup>36</sup> The level of lending rates was much higher--around 30-35 percent p.a., but these high intermediation spreads reflect to a good extent the severe problem of non-performing loans in banks' portfolios, rather than tight liquidity. In any case, the high lending rates tended to aggravate the financial conditions of the enterprises and increase their financial distress, creating obvious complications for the program.

Even though monetary policy did not seem unduly restrictive, the implementation of the program, combined with strict enforcement of the new payment rules, had a strong impact on enterprises. During the first semester of 1990, 7,000 of them fell into some kind of arrears, 3,000 were unable to make their payments within 30 days, and 350 were declared bankrupt. A large number of enterprises attempted to postpone bankruptcy by not paying wages. At the end of the first semester the situation was, however, very differentiated, with several enterprises increasing wages above the ceiling and several others unable to make wage payments within the ceiling. It was reported that a large number of enterprises did not make any wage payments in May to avoid the 60-day trigger mechanism for bankruptcy.

Table 2.3

Balance Sheet of NBY, Dec 1989-Dec 1990  
(In Billions of Dinars)

	Dec	Mar	Jun	Sep	Dec
Net Foreign Assets	26	44	58	66	39
Net Domestic Assets	135	131	131	141	165
Base Money	26	40	53	71	69
FX Liabilities to Banks	135	135	136	136	135

Source: NBY

<sup>36</sup> However, the constancy of nominal rates raises doubts about its value as an indicator of liquidity. It is possible that the constancy of the free deposit rates reflects the maintenance of the discount rate at 23 percent per year during the first semester.

Table 2.4

**Monetary Survey, Dec 1989-Dec 1990**  
(In Billions of Dinars)

	Dec	Mar	Jun	Sep	Dec
Net Foreign Assets	-61	-39	-29	-16	-46
Net Domestic Assets	306	314	333	355	388
M1	51	75	100	125	127
Dinar Time Deposits	42	43	50	57	59
FX Deposits	152	157	154	157	156
M3	245	275	304	339	342

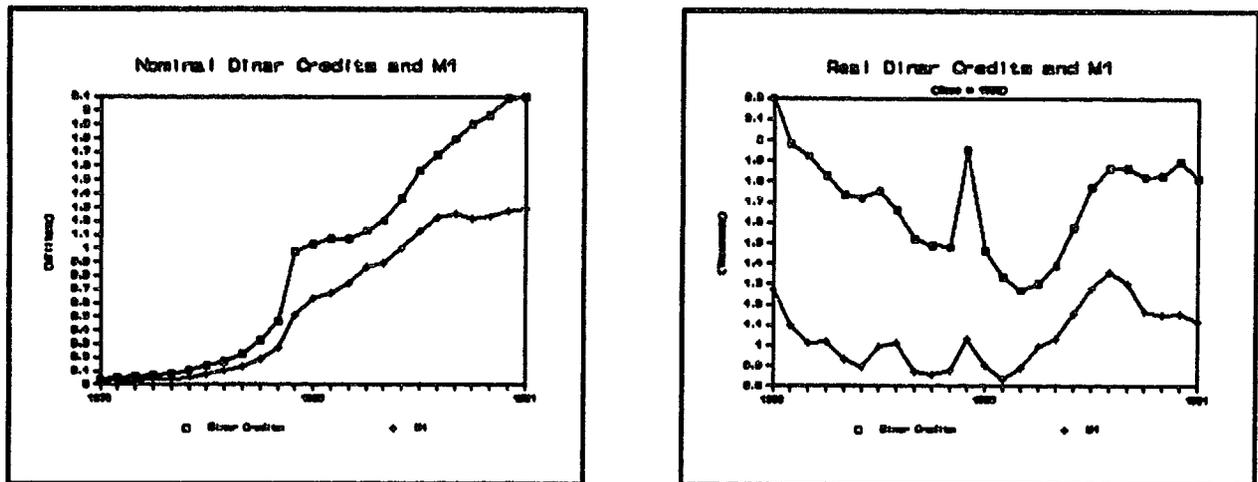
Source: NBY

Pressure to relax the monetary policy mounted during the first semester of 1990 and produced a relaxation starting in June. The relaxation was accomplished mostly by implementing measures to increase the multiplier, although central bank credits also increased somewhat. The result was a rapid increase in the stock of commercial bank credits after that month (figure 2-7). This increase led to a further rise in wages and a revival of inflationary pressure in the second semester. The relaxation of monetary policy also aborted the expected shake-out of the industrial sector by keeping loss-makers afloat while allowing them to resume wage payments.

Concern over the revival of inflation led the central bank to shift back to a restrictive monetary policy in early October. However, there are indications that the banks avoided a contraction in credit by not complying with the reserve requirements. A further indication of the difficulty the central bank was having conducting monetary policy was the unusual episode of December 1990, whereby one of the regional branches of the central bank reportedly increased credits by US\$1.8 billion equivalent of Dinars in order to finance pensions and enterprise wages (The Economist, January 12 1990), a step it took without prior notification to the board of governors.

The increase in domestic credits did not translate into monetary expansion in the fourth quarter because of the US\$ 3 billion loss of foreign reserves that happened during the same period. As shown in tables 2.3, 2.4 and figure 2.7, the increase in domestic credits was almost fully matched by a decrease in net foreign assets, resulting in roughly constant stocks of base money, M1 and M3. Thus, although there was not a further escalation in inflation late in the year, the rapid loss of reserves created obvious doubts about the sustainability of the stabilization program. The recognition that the real exchange rate had become severely overvalued led to a corrective 30 percent devaluation in January 1, 1991. In addition, the convertibility of the Dinar was abandoned in December, as the government interrupted sales of foreign exchange to households in order to prevent a further loss of reserves.

Figure 2.7 Dinar Credits and M1, 1989-90



The devaluation of January 1, 1991 resulted in increasing rates of inflation in January and February (5 and 10 percent, respectively), despite the reimposition of controls on wages of loss-making enterprises and the efforts to reestablish control over monetary policy. Furthermore, the exchange rate became again severely overvalued, as a result of the accumulated increase in prices.

#### An Assessment of the Main Issues

The Yugoslav program of 1990 is an additional example of an exchange-rate based program lacking adequate correction of domestic imbalances. The program was very successful in the first semester, but started to falter in the second half of the year. Enterprises continued to run losses, wages increased beyond the ceilings, fiscal resources were diverted towards wage payments of public sector employees and, finally, monetary policy became largely accommodating. Although the maintenance of the exchange rate freeze and the open trade account prevented a further escalation of inflation late in the year, the drastic overvaluation of the exchange rate and the rapid loss of reserves ultimately forced the government to make a corrective devaluation and to suspend the convertibility of the Dinar.

The challenge faced by policy-makers in 1991 is to avoid the reemergence of an exchange rate-wages-prices spiral. The only solution to this problem is a return to the discipline of the first semester of 1990, including the reinstatement of some kind of enforceable wage policy. Although the measures taken in early 1991 are a step in the right direction, the prospects for their sustained implementation are still unclear, depending on a high degree of consensus among the various republics.

Fiscal policy also needs to be strengthened to support the restructuring program, since the initial fiscal commitments to the reforms were clearly insufficient. For instance, the resources allocated to the social program would clearly have been inadequate had loss-makers really been forced into bankruptcy. Final estimates of the quality of the portfolios of the commercial banks also indicated the need for more fiscal support for the

financial restructuring program. The fact that the public sector ran a small surplus is almost completely irrelevant, as the imbalances in the Yugoslav economy were never located in the non-financial public sector but rather in other sectors of the economy.

Events in the second semester of 1990 also indicate that, for the stabilization to be successful, there must be much faster progress in the area of enterprise and bank restructuring and privatization. To some extent, the slow progress reflects institutional and human resource constraints on implementation of the restructuring effort. It also reflects the absence of adequate fiscal commitment to the reforms. Finally, it reflects insufficient political resolve to deal effectively with the loss-makers and the associated increase in unemployment. Until these problems are effectively tackled, however, the prospects for stabilization and growth will be highly uncertain.

References

- Blanchard, O., and S. Fischer. 1989. Lectures on Macroeconomics. Cambridge, Mass: MIT Press.
- Bole, V. and Gaspari, M. (1990). "The Yugoslav "Way" to Hyperinflation. Belgrade. Processed.
- Bruno, M., and S. Fischer. 1987. "Seignorage, Operating Rules and the High Inflation Trap." NBER Working Paper No. 2413. National Bureau of Economic Research, New York. October.
- Calvo, G., and F. Coricelli. 1990. "Stagflationary Effects of Stabilization Programs in Reforming Socialist Countries: Supply Side vs. Demand Side Factors." International Monetary Fund and World Bank, Washington, D.C. August.
- Cohen, D. 1988. "The Management of Developing Countries' Debt: Guidelines and Applications to Brazil". The World Bank Economic Review, Vol 2 (1), January, pp. 1-48.
- Commander, S., and F. Coricelli. 1990a. "The Macroeconomics of Price Reform in Socialist Countries: A Dynamic Framework." World Bank, (PRE) Working Paper n. 555. Washington, D.C.
- de la Calle, L. 1990. "Macro and Microeconomic Linkages of the Polish Reforms." World Bank, Washington, D.C.
- Dornbusch, R. (1987). "Lessons from the German Inflation Experience of the 1920s". In Dornbusch, R and Fischer, S. (eds), Essays in Honor of Franco Modigliani. Cambridge, MA. The MIT Press.
- Dornbusch, R and Fischer, S. (1986). "Stopping Hyperinflation: Past and Present". Weltwirtschaftliches Archiv, 122 (1) (April): pp 1-47.
- Dornbusch, R and Simonsen, M. (1988). "Inflation Stabilization: The Role of Incomes Policy and of Monetization". In Dornbusch, R. Exchange Rates and Inflation. The MIT Press.
- Drazen, A., and E. Helpman. 1988. "Inflationary Consequences of Anticipated Macroeconomic Policies." Quarterly Journal of Economics
- Fischer, S. 1977. "Long-Term Contracts, Rational Expectations and the Optimal Money Supply Rule." Journal of Political Economy 85 (February).
- Frydman R. and A. Rapaczynski. 1990. "Markets and Institutions in Large Scale Privatizations: An Approach to Economic and Social Transformations in Eastern Europe," Paper presented at the World Bank Conference "Adjustment and Growth: Lessons for Eastern Europe," Pultusk, Poland October 4-5.
- Frydman R. and S. Wellisz. 1990. "The Ownership-Control Structure and the Behavior of Polish Enterprises during the 1990 Reforms: Macroeconomic Measures and Microeconomic Response," Paper presented at the World Bank Conference "Adjustment and Growth: Lessons for Eastern Europe," Pultusk, Poland October 4-5.

- Gaspari, M. 1988. "Financial Crisis in Yugoslavia Since the Early 1980s: Causes and Consequences." Paper presented at the Conference on Financial Reform in Socialist Countries, Florence, Italy, October 1987.
- Gomulka, S. 1990. "Reform and Budgetary Policies in Poland, 1989-90." In "Economic Transformation in Hungary and Poland." European Economy (43).
- Helpman, E. and L. Leiderman (1991). "Real Wages, Monetary Accommodation and Inflation". European Economic Review, Vol. 34: pp. 897-911.
- Hinds, M. (1990). "Issues in the Introduction of Market Forces in Socialist Economies". World Bank, Washington D.C., January.
- Kiguel, M, and N. Liviatan. 1990. "The Inflation Stabilization Cycles in Argentina and Brazil." World Bank, (PRE) Working Paper Series No. 443. Washington, D.C. August.
- Knight, P. 1984. "Financial Discipline and Structural Adjustment in Yugoslavia." World Bank Staff Working Paper No. 705. Washington, D.C. November.
- Kolodko G. and W. McMahon. 1987. "Stagflation and Shortageflation: A Comparative Approach," Kyklos, Vol.40: 176-196.
- Konovalov, V. 1989a. "Poland: Competitiveness of Industrial Activities: 1961-86." World Bank, Washington, D.C.
- Konovalov, V. 1989b. "Yugoslav Industry: Structure, Performance and Conduct." Mimeo. World Bank, Washington, D.C. November.
- Kornai J. 1990. The Road to a Free Economy. Shifting from a Socialist System: The Case of Hungary. New York: Norton.
- Lipton, D., and J. Sachs. 1990. "Creating a Market Economy in Eastern Europe: The Case of Poland." Brookings Papers on Economic Activity, 1. Brookings Institution, Washington, D.C.
- Liviatan, N. and Piterman, S. (1986). "Accelerating Inflation and Balance of Payments Crises, 1973-84". In Yoram Ben-Porath, ed. The Israely Economy. Cambridge, MA. Harvard University Press.
- Liviatan, N. 1988. "Israel's Stabilization Program." World Bank, (PPR) Working Paper Series No. 91. Washington, D.C. September.
- Lizondo, J., and P. Montiel. 1989. "Contractionary Devaluation in Developing Countries: An Analytical Overview." IMF Staff Papers 36 (1)(March).
- Lucas, R. 1973. "Some International Evidence on Output-Inflation Trade-Offs." American Economic Review 63 (June).
- Mates, N. (1987). "Some Specific Features of Inflation in a Heavily-Indebted Socialist Country". Economic Analysis and Workers' Management, 21 (4): pp 419-32.
- Mencinger, J. (1987). "Acceleration of Inflation into Hyperinflation: The Yugoslav Experience in the 1980s". Economic Analysis and Workers' Management, 21 (4): pp 399-418.
- Mencinger, J. (1989). "Privredna Reforma i Nezaposlenost" (Economic Reform and Unemployment). Privredna Kretanja Jugoslaviye, March.
- Montiel, P. (1989). "Empirical Analysis of High-Inflation Episodes in Argentina, Brazil and Israel". IMF Staff Papers, 36 (September).

- Olivera, J. 1967. "Money, Prices and Fiscal Lags: A Note on the Dynamics of Inflation." Quarterly Review (Banca Nazionale del Lavoro) 20 (September).
- Pazos, F. 1978. Chronic Inflation in Latin America. New York: Praeger.
- Rocha, R. (1991). "Inflation and Stabilization in Yugoslavia". Washington D.C., The World Bank. Processed.
- Rocha, R. and Saldanha, F. (1991). "Fiscal and Quasi-Fiscal Deficits, Nominal and Real: Some Conceptual and Measurement Issues". Washington D.C., The World Bank. Processed.
- Rotemberg, J. 1987. "The New Keynesian Microeconomic Foundations." NBER Macroeconomics Annual.
- Saldanha, F. (1989). "Self-Management: Theory and Yugoslav Practice". Washington D.C., The World Bank. Processed.
- Sargent, T., and N. Wallace. 1981. "Some Unpleasant Monetarist Arithmetic." Quarterly Review (Federal Reserve Bank of Minneapolis) (Fall).
- Simonsen, M. (1989). "Inércia Inflacionária e Inflação Inercial". In Barbosa, F. and Simonsen, M., eds, Plano Cruzado: Inércia x Inépcia. Rio de Janeiro: Editora Globo.
- Tanzi, V. 1977. "Inflation, Lags in Tax Collection, and the Real Value of Tax Revenue." IMF Staff Papers 24 (March).
- Taylor, J. 1979. "Staggered Price-Setting in a Macro Model." American Economic Review 69 (May).
- van Wijnbergen, S. 1982. "Stagflationary Effects of Monetary Stabilization Policies, a Quantitative Analysis of South Korea." Journal of Development Economics 10:133-69.

PRE Working Paper Series

<u>Title</u>	<u>Author</u>	<u>Date</u>	<u>Contact for paper</u>
WPS717 Does Financial Liberalization Really Improve Private Investment in Developing Countries?	Jacques Morisset	July 1991	S. King-Watson 31047
WPS718 Impact of Investment Policies on German Direct Investment in Developing Countries: An Empirical Investigation	Andrea Gubitz	July 1991	S. King-Watson 31047
WPS719 How Trade and Economic Policies Affect Agriculture: A Framework for Analysis Applied to Tanzania and Malawi	Ramon Lopez Ridwan Ali Bjorn Larsen	July 1991	M. Gunasekara 32261
WPS720 The Outlook for Commercial Bank Lending to Sub-Saharan Africa	Ellen Johnson Sirleaf Francis Nyirjesy	July 1991	S. King-Watson 31047
WPS721 The Demand for Money in Developing Countries: Assessing the Role of Financial Innovation	Patricio Arrau José De Gregorio Carmen Reinhart Peter Wickham	July 1991	S. King-Watson 31047
WPS722 Is Rice Becoming an Inferior Good? Food Demand in the Philippines	Merlinda D. Ingco	July 1991	P. Kokila 33716
WPS723 Improving Women's and Children's Nutrition in Sub-Saharan Africa: An Issues Paper	Olayinka Abosede Judith S. McGuire	July 1991	O. Nadora 31091
WPS724 Fiscal Issues in Adjustment: An Introduction	Riccardo Faini Jaime de Melo	July 1991	D. Ballantyne 37947
WPS725 How Structure of Production Determines the Demand for Human Capital	Indermit S. Gill Shahidur R. Khandker	July 1991	A. Sloan 35108
WPS726 Perspectives on the Design of Intergovernmental Fiscal Relations	Anwar Shah	July 1991	A. Bhalla 37699
WPS727 The Effects of Debt Subsidies on Corporate Investment Behavior	Mansoor Dailami E. Han Kim	July 1991	A. Bruce-Konuah 80356
WPS728 Does Better Access to Contraceptives Increase their Use? Key Policy and Methodological Issues	Susan Cochrane Laura Gibney	July 1991	O. Nadora 31091
WPS729 Is Export Diversification the Best Way to Achieve Export Growth and Stability? A Look at Three African Countries	Ridwan Ali Jeffrey Alwang Paul B. Siegel	July 1991	M. Gunasekara 32260

PRE Working Paper Series

<u>Title</u>	<u>Author</u>	<u>Date</u>	<u>Contact for paper</u>
WPS730 Wage and Employment Policies in Czechoslovakia	Luis A. Riveros	July 1991	V. Charles 33651
WPS731 Efficiency Wage Theory, Labor Markets, and Adjustment	Luis A. Riveros Lawrence Bouton	July 1991	V. Charles 33651
WPS732 Stabilization Programs in Eastern Europe: A Comparative Analysis of the Polish and Yugoslav Programs of 1990	Fabrizio Coricelli Roberto de Rezende Rocha	July 1991	R. Martin 39065
WPS733 The Consulting Profession in Developing Countries: A Strategy for Development	Syed S. Kirmani Warren C. Baum	July 1991	INUDR 33758
WPS734 Curricular Content, Educational Expansion, and Economic Growth	Aaron Benavot	July 1991	C. Cristobal 33640